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14. ABSTRACT <p>SEVIEW Phase I, its Co-investigators and Administrative Core has completed Year 5 (NCE) of 14 community-based research and service outreach programs. The 6 additional programs under SEVIEW Phase II are nearing the end of Year 4 (NCE) operation. The purpose of SEVIEW is to discover and deliver innovative health care and community capacity building solutions for underserved populations. An additional targeted outcome is to reduce the rejection rate as well as improve the enlistment opportunities and tenure of active duty military personnel.</p> <p>The Administrative Core delivered operations, infrastructure access, strategic consultation, and quality process support to ensure proper directions, logistics, financial transactions, regulatory compliance, collaborative exchange, community-capacity building, and alignments with the goals of programmatic synergies and streamlining administrative processes and to foster strategic partnerships and programs to address the burden of health disparities.</p> <p>SEVIEW's community-based research and service initiatives are aligned under three program categories addressing (1) Education, (2) Preventive Medicine, Health and Wellness, and (3) Community Partnerships and Outreach. Over 20,000 participants took part in the various activities and services offered by the projects. Synergies and relationships were developed between co-investigators, staff, and community leaders resulting in sustainability of research and healthcare activities.</p> <p>A thorough evaluation process was completed, inclusive of an evaluation logic model to identify SEVIEW success objectives, using qualitative and quantitative methods to provide a comprehensive assessment of the program implementation and outcomes. The projects overwhelmingly report that stated goals were achieved and any goals that were not achieved were due to minor issues.</p>					
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Introduction

South Carolina and other Southeastern states share a disproportionate burden of chronic diseases, including diabetes, hypertension, various cancers, metabolic syndrome and periodontal disease, which limit opportunities for individuals to enter military service. The rural nature of the region compounds issues of healthcare access and delivery. Racial, ethnic and socioeconomic disparities amplify incidence, prevalence and complications associated with chronic illness. With escalating healthcare costs impacting federal, state and employer budgets, the economic consequences of health disparities represent a key driver for effecting change, improving quality of care for many Americans and ensuring a military-ready population. The Medical University of South Carolina (MUSC) is addressing these burdens through the **Southeastern Virtual Institute for Health Equity and Wellness (SEVIEW)**. The purpose of SEVIEW is to discover and deliver innovative health care and community capacity building solutions for underserved populations. An additional targeted outcome is to reduce the rejection rate as well as improve the enlistment opportunities and tenure of active duty military personnel. Sabra C. Slaughter, PhD, serves as the Principal Investigator (PI) of SEVIEW and Director of the SEVIEW Administrative Core (SEVAC). Dr. Slaughter and SEVAC provide comprehensive program planning, management, coordination, integration and evaluation. Overall, SEVIEW seeks to (1) increase awareness of the underlying causes of chronic diseases in the region, (2) develop novel methods to engage communities in the prevention and treatment of chronic diseases, (3) develop community-based services and research initiatives focused on chronic diseases and socioeconomic factors, and (4) develop a range of youth-based, active and interactive, electronic modalities to increase the prevention, detection and treatment of chronic diseases. This document contains the SEVIEW Evaluation Report (Appendix O) that provides a comprehensive assessment of program implementation and outcomes.

Body

I. OVERVIEW

SEVIEW Phase I, its Co-investigators and Administrative Core has completed Year 5 of 14 community-based research and service outreach programs. The 6 additional programs under SEVIEW Phase II are nearing the end of Year 4 operation. Over 20,000 participants took part in the various activities and services offered by the projects. Synergies and relationships were developed between co-investigators, staff, and community leaders resulting in sustainability of research and healthcare activities.

A thorough evaluation process was completed, inclusive of an evaluation logic model to identify SEVIEW success objectives, using qualitative and quantitative methods to provide a comprehensive assessment of the program implementation and outcomes. The projects report that stated goals were achieved and any goals that were not achieved were due to minor issues. SEVIEW's community-based research and service initiatives are encompassed within the program's integrative framework (see **Fig. 1**) and address the following goals and objectives:

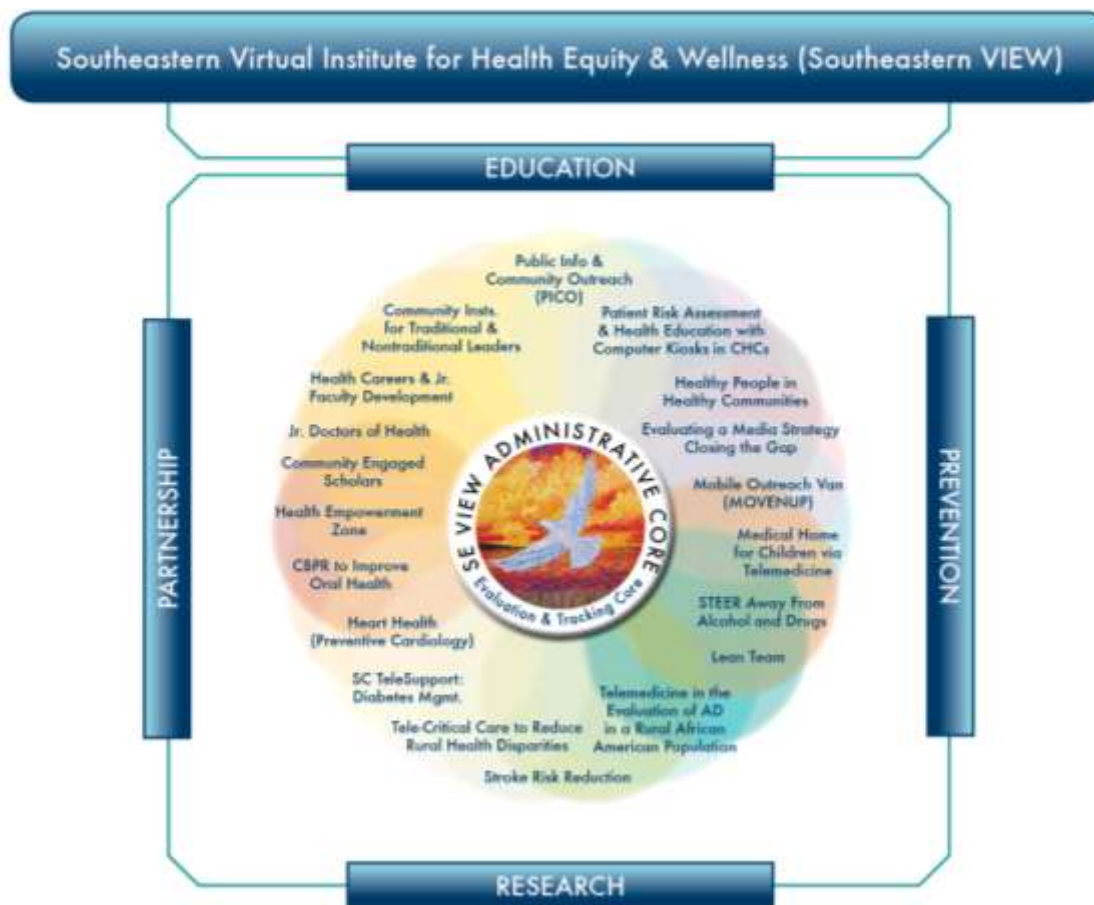
GOAL A – Integrate MUSC's model initiatives focused on health disparities into SEVIEW by identifying programmatic synergies and streamlining administrative processes.

- Objective A1: Establish a single Administrative and Coordinating Core to oversee project logistics, financial transactions, regulatory compliance and bi-directional communications. *See Fig. 1 for a graphical representation of the integrative model; Tables 3-5 (in §IV.B) show programmatic synergies.*
- Objective A2: Establish an Evaluation & Tracking Core to monitor SEVIEW activities and provide timely feedback to the Principal Investigator, Initiative Directors and TATRC to improve program quality. *See §IV.A2 for the objective evaluation expertise; Figure 1 depicts the logic model for SEVIEW.*

GOAL B – Develop strategic partnerships and programs to address the burden of health disparities.

- Objective B1: Establish an Educational Program to reduce health disparities: Program initiatives focus on increasing awareness of health issues in communities that bear a disproportionate burden of chronic diseases, and addressing educational deficits related to chronic diseases. *Phase I of SEVIEW includes three programs, see §IV.B1.*
- Objective B2: Establish a Preventive Medicine, Health and Wellness Program to reduce health disparities: Program initiatives expands proven strategies and/or develop novel methods to engage communities, and remove barriers to effective healthcare. *Phase I of SEVIEW includes three programs, see §IV.B2.*
- Objective B3: Establish a Community Partnerships and Outreach Program to reduce health disparities: Program initiatives provides the foundation for integrated efforts to address chronic disease burden in populations that could provide talented recruits for military service, and disseminate evidence-based research findings. *Phase I of SEVIEW includes six programs, see §IV.B3.*

Figure 1. SEVIEW's Integrative Framework



II. PROJECT MILESTONES

SEVIEW is designed in three phases with corresponding milestones. SEVIEW leadership, Initiative Directors, Advisory Committee and Evaluation Leaders met at scheduled intervals to review progress and ensure that milestones and objectives were met. **Table 1** lists the project milestones that were met throughout the project performance period.

Table 1. Completed Project Milestones

Phase I July 1, 2010-June 30, 2011: Design and Assessment (Yr 1)	Phase II July 1, 2011-June 30, 2013: Program Activities and Evaluation (Yr 2-3)	Phase III July 1, 2013-June 30, 2014: Sustainability Plan Development & Transitional Activities (Yr 4-5)
Milestone 1: Establish the Administrative and Coordinating Core, identify programmatic, financial and administrative staff; set up designated accounts; develop a communications plan; procure equipment and meeting facilities; obtain IRB/Human Subjects Review approvals, as required; and identify evaluation and tracking personnel.	Milestone 1: Implement, maintain and enhance SEVIEW program activities (as described below in Methods Section) with continuous evaluation and tracking activities as developed in Phase I, making mid-course adjustments as needed and ensuring proper data management and other best practices.	Milestone 1: Maintain SEVIEW program activities; identify and pursue opportunities for expansion in the region.
Milestone 2: Design and implement a strategic planning process that clarifies SEVIEW goals, objectives and measurable outcomes and promotes a culture of collaboration among its partners.	Milestone 2: Produce and participate in forums to enhance the visibility and effectiveness of SEVIEW as a focal point for minority health and health disparities and to communicate its value.	Milestone 2: Enhance SEVIEW's visibility and effectiveness as a focal point for minority health and health disparities.
Milestone 3: Establish SEVIEW External Advisory Committee, e.g. nominate and secure commitments from dedicated experts, as appropriate, create board charter, and develop meeting schedules for the project's duration.	Milestone 3: Identify and pursue opportunities to expand SEVIEW in the state and Southeastern region.	Milestone 3: Provide quarterly and annual reports; develop sustainability plans for initiatives and interventions that demonstrate measurable impacts; identify viable funding opportunities and submit grant applications.
Milestone 4: Conduct initial assessments for model programs, including program evaluation and tracking measures, and complete strategic planning efforts to identify program synergies and Phase II activities.	Milestone 4: Provide quarterly and annual reports of ongoing research and outreach activities.	Milestone 4: Communicate with TATRC personnel to ensure that program activities meet federal requirements.
Milestone 5: Communicate with TATRC personnel to ensure that program activities meet federal requirements.	Milestone 5: Communicate with TATRC personnel to ensure that program activities meet federal requirements.	

III. MILITARY SIGNIFICANCE

Disparities in health and healthcare impose a tremendous burden on individuals and communities and account for considerable costs to society as a whole. Disparities in access to high quality preventive services contribute to increased healthcare costs through excess hospitalizations and emergency room visits. An analysis by the Center for Health Care Strategies and RAND Corporation suggested that the cost to the U.S. healthcare system of diabetes disparities alone could be \$4 billion/yr. A CDC report suggests chronic diseases account for >75% of the annual \$1.4 trillion for medical care costs in the U.S.¹ The 2004 National Healthcare Disparities Report found significant disparities in quality of and access to care. Blacks, Latinos, American Indians and Asians were found to receive 66%, 50%, 33% and 10% less quality of care, respectively, compared to whites. These groups were found to have 30-90% less access to care than whites, with Latinos having the most difficulty. These findings were 60-80% worse if the patient was poor.² With escalating healthcare costs

impacting federal, state and employer budgets, the economic consequences of disparities could be a key driver for effecting change, improving care for many Americans, and ensuring a military-ready population. The Task Force on the Future of Military Health Care's report to the Secretary of Defense (Dec 2007) calls for "...Military Health Care collaboration with the private sector and other federal agencies in order to share, adopt, and promote best practices" and "...continue to prioritize prevention programs in accordance with the National Commission on Prevention Priorities."

SEVIEW leveraged considerable institutional research knowledge and established community partnerships to reduce the disproportionate burden of chronic diseases (e.g., diabetes, hypertension, obesity, cancer, stroke, cardiovascular disease) in South Carolina. This region has historically been fertile recruiting territory for the military. The eradication of health disparities relates to health eligibility standards for enlistment, the health of current military personnel, military dependents and veterans, and the health of the American public as a whole. Through a series of community-based research and service outreach initiatives, SEVIEW aims to have a positive impact on the health of Americans and effectively reduce health risk factors that preclude military enlistment and shorten the functional tenure of active duty personnel. Progress to date demonstrates vision, desire, commitment and a viable plan to change cultural norms, provide access to quality healthcare, and foster a cadre of military-ready personnel.

Significance Related to Cardiovascular Disease and Stroke

While South Carolina is commonly referred to as the 'Buckle of the Stroke Belt,' the state has only five JCAHO-certified Primary Stroke Centers; three are in the Charleston area. This reflects a pronounced shortage of stroke specialists with a few practitioners concentrated in two or three urban areas. Access to local resources and centralized specialty care via telemedicine will lead to a reduction of risk factors and improved management of existing disease and translate into better outcomes, reduced disparities in access, and healthier lives for active duty personnel and veterans. SEVIEW will test and implement model telemedicine programs that are applicable to military medicine and to specialized healthcare.

Significance Related to Diabetes

According to CDC, South Carolina ranks 2nd worst of 50 states in diagnosed cases of diabetes. Overall prevalence doubled from 4.9% in 1997 to 9.6% in 2006, and was >50% higher among blacks (13.8%) than whites (8.2%). Prevalence among black men (13.2%) was 67% higher than among white men (7.9%).^{3,4} Diabetes adds significantly to the morbidity and mortality of hospital admissions for other causes. A large proportion of active and reserve soldiers are at risk for diabetes. Many soldiers transition into VA care post-deployment; a large number of veterans in SC reside in rural areas and are at high risk for diabetes. SEVIEW initiatives include interventions to improve access and outcomes for diabetes in rural areas, leading to improved health of affected active duty soldiers and a significant proportion of veterans.

Significance Related to Obesity

The US Armed Forces are recruiting from an increasingly overweight pool.⁵ A recent study found 13-18% of young men and 17-43% of young women exceed military weight-for-height standards.⁶ Failure to meet weight standards is the top reason for medical disqualification for service, with ~10,000 enlisted applicants disqualified for this reason in 2007.⁷ Data published in *Recruit Medicine* indicate that 60% of Army men, 69% of Navy men, and 35% of Air Force men may be characterized as overweight or obese.⁸ Similarly, 41% of Army women, 46% of Navy women, and 35% of Air Force women are overweight or obese. SEVIEW initiatives include interventions to improve the health and fitness of young adults and their families leading to improved military readiness.

Significance Related to Cancer

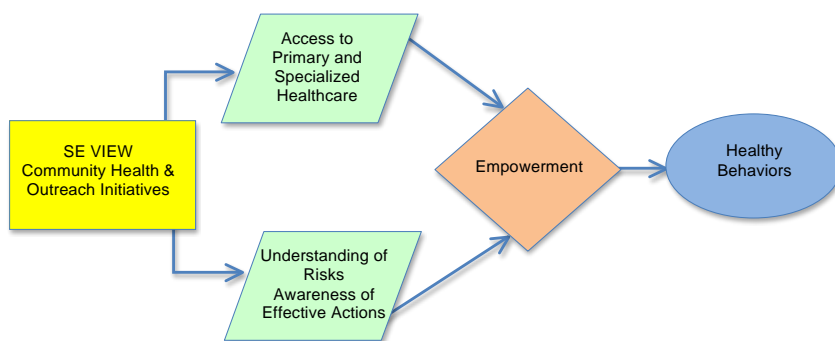
Cancer, the 2nd leading cause of death in the U.S., is common among active duty and retired military personnel, who are at higher risk due to likelihood of long-term smoking and exposure to carcinogens such as spent nuclear fuels, propellants or combustion products. Racial and gender differences in cancer outcomes seen in the general population persist among military personnel. Early detection and treatment are critical for favorable prognoses. SEVIEW initiatives focused on cancer screening, early detection, education and

research that could play a major role in decreasing cancer death rates in areas where rates are highest, e.g., the I-95 Corridor. Many I-95 Corridor residents and family members are current or former members of the military. The outcomes of SEVIEW's work will have great relevance for the health of the military workforce as well as that of potential military personnel.

IV. KEY METHODOLOGY

SEVIEW established the organizational structure, governance, project management, commitment and expertise to carry out plans in a timely, cost-efficient manner. The plan integrated efforts across SEVIEW initiatives led by individuals with distinct, complementary expertise. SEVIEW operated as a model of cooperation to advance collaborative community-based research and service outreach initiatives designed to improve health conditions that preclude enlistment or reduce the functional tenure of military personnel. The integrative framework is shown in **Fig. 1**. The flow concept is illustrated in **Fig. 2**. The work plan is described below within the framework of overarching goals and objectives.

Figure 2. Conceptual Flow of SEVIEW's Plan to Reduce Health Disparities



A. GOAL A – Integrate MUSC’s model initiatives focused on health disparities into SEVIEW by identifying programmatic synergies and streamlining administrative processes.

A1. Objective A1 – Establish a single Administrative and Coordinating Core to oversee project logistics, financial transactions, regulatory compliance and bi-directional communications.

Effective leadership and management ensure that SEVIEW initiatives are fully realized. SEVIEW had strong support at the highest levels at MUSC. The Principal Investigator, Project Manager, Finance Director and Initiative Directors were highly capable individuals with the commitment, experience and authority to conduct SEVIEW.

A1a. SEVIEW Administrative and Coordinating Core (SEVAC)

Figure 3 shows the SEVIEW Organizational Chart. Key elements include a well-defined academic home, clear leadership, synergistic programs and committee structures. Individual initiatives were aligned under the three program headings, as detailed below in §B. SEVAC ensured that lines of communication, agendas, actions and decisions were coordinated and targeted to the project goals and objectives. The SEVAC Program Manager served as a nexus for intra-institutional and external communications among SEVIEW partners, community groups, the business community, TATRC and various administrative units across the MUSC enterprise. SEVAC staff coordinated activities across the region, convened committee and town hall meetings, hosted retreats, managed program logistics, and ensured overall operational efficiency. **Table 2** lists significant SEVAC activities during the life of SEVIEW.

Figure 3. SEVIEW Organizational Chart

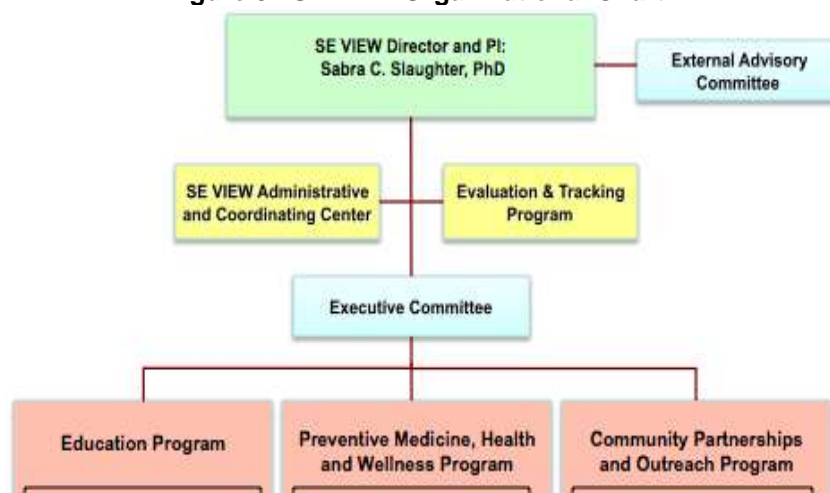


Table 2. Significant SEVAC Activities

Communication/Coordination Activities	Administrative/Fiscal Activities	Integrative Activities
Monthly meetings of the SEVIEW PI with the MUSC President and Provost	Grants/contracts administration, human resources administration, business operations management and procurement	Annual meetings of the SEVIEW External Advisory Committee (see §A1d)
Bi-monthly meetings of the SEVIEW Executive Committee (see §A1d)	Monthly reviews of expenditure reports for accuracy and compliance with federal and institutional guidance	Bi-monthly strategic planning reviews and sharing of ‘best practices’ for community engagement and coordinated communications in the locales that host the SEVIEW initiatives
Monthly SEVAC conference calls	Regular reviews of activity and costs per initiative to identify under/overutilization of resources or disproportionate use of resources by any area, with additional review, adjustment or action as needed	Ongoing discussions with the MUSC Marketing Department, the local WCSC TV Station, and members of SEVAC to carryout the established marketing and branding plan for SEVIEW
Intensive engagement of key consultant services as needed for strategic planning and evaluation (see §A1c and §A2)	Guidance and assistance to comply with all reporting requirements of TATRC and other cognizant entities	Ongoing program assessment and evaluation within the overall SEVIEW Evaluation Plan (see §A2)
Engagement of the Junior Faculty Development recipients to foster activities and initiatives to promote participants’ development	Overseeing the multi-level regulatory compliance process and interpret federal and state fiscal policies and procedures	Serve on boards, committees and community forums on the local and state levels to include: MUSC Diversity and Inclusion Strategic Plan Board; MUSC/Charleston County School District Partnership; Congressional Black Caucus Institute; South Carolina Health Coordinating Council; Region IV Health Equity Board; Association of Academic Health Centers and Social Determinants
Open forums on the MUSC campus and in SEVIEW communities, at least monthly on average (Grand Rounds, lunch-n-learns, special seminars, sponsored speakers, panel discussions, town meetings, etc.)	Prepare accurate and timely technical reports for TATRC officials that highlight programmatic and financial progress	Leadership, visible participation and programming of annual National Conferences on Health Disparities
Robust social media campaign that serves as a source of relevant health disparities data for those who are seeking information; a platform for communication between the SEVIEW team and the community: <ul style="list-style-type: none"> • Website http://musc.edu/seview • Facebook Page https://www.facebook.com/SEVIEW1 • Twitter https://twitter.com/#!/SEVIEW1 • Pinterest Page https://www.pinterest.com/seview/ • Google Plus Page https://plus.google.com/113856284520869767628/posts 		

A1b. Director and Principal Investigator

Sabra Slaughter, PhD, SEVIEW Principal Investigator, serves as Chief of Staff of the President of MUSC. He previously directed the SC Area Health Education Consortium (AHEC). Dr. Slaughter earned a PhD in psychology from the University of Michigan. Dr. Slaughter has extensive administrative experience in health professional education, outreach and workforce diversity. He has been PI of 9 major extramural projects related to healthcare and health disparities. As Senior Advisor to the President, Dr. Slaughter works closely with the MUSC Board of Trustees, President, Vice Presidents, Deans and Faculty. He has the authority to make institutional decisions and commitments in developing SEVIEW policies and procedures, and was authorized to manage the adoption and implementation of best practices.

A1c. Strategic Planning Consultant

SEVIEW engaged TAGA Consulting, a strategic planning and consulting company, to help design, facilitate and support strategic planning and ongoing quality improvement processes. TAGA's founder and principal, Thomas A. Gordon, PhD, is a licensed psychologist with degrees from Harvard University and the University of Michigan. Dr. Gordon has provided strategic consulting services to public and private institutions including Aetna Healthcare, AT&T, Johnson & Johnson, Merck Pharmaceuticals, Siemens, US Army, US Dept. of Labor and US Postal Service. Responsibilities include collaborating on the design of the planning process, supporting the flow of information between SEVIEW initiative directors and key stakeholders to identify synergies and minimize barriers; developing processes to ensure effective communications, cultural sensitivity and shared focus on SEVIEW activities; and developing and guiding change management activities to support commitment to the SEVIEW plan.

A1d. Committee Structure

Internal and external committees facilitated coordination and accountability. Committee members and stakeholders received annual progress reports in addition to interim (quarterly and ad hoc) reports, plans and assessment materials.

- **Executive Committee (EC).** The Executive Committee (EC), composed of the Initiative Directors, is SEVIEW's internal committee for communication, collaboration and management. The PI serves as chair, the Program Manager serves as Executive Secretary, and the Strategic Planning Consultant and Evaluation & Tracking Director are standing advisors. The EC holds bi-monthly 3.5-hr meetings. Each meeting includes 2-3 scheduled 15-min program reports on recent progress, challenges, alternatives, results and future directions as well as 3-min 'roundtable' updates from other program leaders. The EC's role is to ensure integration among initiatives, advise on issues common to all SEVIEW initiatives such as resource utilization, and see that SEVIEW milestones are met in a timely manner. The members are responsible for evaluation and tracking with direct input from the Evaluation & Tracking Director.
- **External Advisory Committee (EAC).** The SEVIEW External Advisory Committee (EAC) is made up of one nationally recognized expert in health disparities (**W. Timothy Garvey, MD**), three civic/community leaders in SC (**Mr. Vince Ford, Allen Parrott, D.Min, and Mrs. Rita Scott**), and one TATRC member (**Wilbur Malloy, MA, MLS – Ex Officio Member**). The purpose of the EAC is to review SEVIEW's impact, integration and productivity based on measurable progress toward goals and to advise SEVIEW leadership concerning scientific direction and results. They also review the performance of the PI and make recommendations for enhancing impact and effectiveness. EAC Community members, in tandem with SEVIEW Initiative Directors, help to create a plan for community education, outreach and advocacy that is responsive to the diversity, needs and interests of the communities served by SEVIEW. The EAC met during the Annual SEVIEW Reception and Retreat that took place in 2012, 2013 and 2014.

A2. Objective A2 – Establish an Evaluation & Tracking Core to monitor SEVIEW activities and provide timely feedback to the Principal Investigator, Initiative Directors and TATRC to improve program quality.

The evaluation planning process, inclusive of an evaluation logic model to identify SEVIEW success objectives, was completed and provides a comprehensive assessment of the program implementation and outcomes. SEVAC engaged Jennifer C. Friday, PhD, of The Friday Consulting Group, to provide expertise and guidance in designing and implementing the Evaluation Plan. Dr. Friday is a behavioral scientist with more than 25 years' experience researching and evaluating health and education programs. She received her BS in biology from Millikin University, and master's and doctoral degrees in psychology from the University of Tennessee, Knoxville. For 13 years she worked at the CDC in programs dealing with HIV/AIDS and violence prevention. Dr. Friday's policy development skills were honed at the Joint Center for Political and Economic Studies in Washington, DC. She has facilitated workshops and training programs, devised strategic plans, and guided program planning and evaluation for government agencies, community-based organizations, and for-profit and non-profit entities, including Community Health Outreach Works, Inc., Alliance for Christian Media, Oakhurst Community Health Center, and the Rosalynn Carter Institute for Human Development.

The evaluation consultant is responsible for: (a) developing the logic model; (b) identifying key success indicators and measures for each initiative; (c) developing the evaluation plan and framework for the overall SEVIEW project; (d) keeping performance indicators and data collection focused on measures of success; (e) demonstrating the value of increased effectiveness and efficiency; (f) utilizing quality improvement methods to achieve evaluation aims; and (g) work with participants on how to utilize evaluation data. The SEVIEW Evaluation includes process, outcome and impact evaluation. The process and outcome components are an integral part of program operations.

Process Evaluation. The process evaluation documents and analyzes implementation of the project. This includes identification and integration of the individual initiatives into the overall SEVIEW project. Data collection methods include document reviews such as quarterly reports, minutes from bi-monthly project meetings, key informant interviews and observations. Data and information from the process evaluation component was used to provide feedback to improve services on an ongoing basis.

Outcome Evaluation. The outcome evaluation documents whether project goals and objectives were met. The Phase I program operations concluded with the development of the Evaluation Plan that integrates the individual initiatives. Each initiative developed a baseline for its activities.

Impact Evaluation. The impact evaluation focuses on the extent to which SEVIEW activities made a difference in the target community. This includes changes in community health status, improved access to care and general improvement in health delivery systems.

The evaluation logic model (**Appendix A**) was developed and provided as a deliverable to TATRC. The basic framework utilizes the SEVIEW goals and objectives to develop guidance for identification of short, medium and long-term outcomes. Each SEVIEW initiative was linked to the SEVIEW goals. The inputs necessary for SEVIEW to be successful were identified. SEVIEW activities include instructional and research activities, outreach and service activities, health care delivery and prevention services, and policy activities. The targeted communities are the I-95 Corridor and Coastal Carolina counties, which represent all the racial and ethnic populations and socio-demographic groups affected by health disparities. The specific outcomes were identified. The outcomes that directly relate to SEVIEW were incorporated into the overall Evaluation Plan. Similarly, the data sources were redefined and drawn from the individual projects. The general evaluation questions were stated and incorporated into the evaluation plan. Please refer to **Appendix O** to review the SEVIEW Evaluation Report.

B. GOAL B – Develop strategic partnerships and initiatives to address the burden of health disparities.

MUSC has substantial strengths serving the goals of education, prevention, community partnership and research to eliminate health disparities. These include a dynamic and diverse faculty, outstanding facilities, a

strong and diverse student body, and many existing community ties. Building on these strengths, SEVIEW has identified and integrated robust programs focused on the elimination of health disparities to ensure a military ready workforce, retention of active duty personnel, and continued health in VA health services.

As shown in the SEVIEW organization chart (**Fig. 3**), SEVIEW’s community-based research and service initiatives are aligned under three program categories addressing **Education (B1)**, **Preventive Medicine, Health and Wellness (B2)**, and **Community Partnerships and Outreach (B3)**. The alignment of initiatives with these objectives is based on primary thrust and specific goals of each project. However, as one might expect, all the programs use resources and tools that integrate educational, disease prevention/health promotion, and community engagement principles.

To illustrate SEVIEW’s synergies, thematic interactions and potential for administrative efficiencies, **Tables 3-5** chart all the SEVIEW initiatives as programmatic clusters with respect to three integrative concepts: **Stages of Life, Community Engagement and Empowerment Strategies, and Disease Targets.**

Table 3. SEVIEW’s Comprehensive Plan to Reduce Health Disparities across the Lifespan

italics = funded in SEVIEW Phase 1

boldface = funded in SEVIEW Phase II

Objectives/Approaches	Stages of Life		
	Children	Adolescents	Adults
B1 EDUCATIONAL PROGRAMS TO REDUCE HEALTH DISPARITIES			
B1a Public Information and Community Outreach (PICO)			
<i>B1b Community Institutes for Traditional and Nontraditional Leaders</i>			
<i>B1c Health Careers Academy & Junior Faculty Development</i>			
B1d Junior Doctors of Health			
B2 PREVENTIVE MEDICINE, HEALTH AND WELLNESS PROGRAMS			
<i>B2a Stroke Risk Reduction Initiative</i>			
<i>B2b Heart Health Initiative (Preventive Cardiology Research)</i>			
B2c SC TeleSupport (Diabetes Management Initiative)			
<i>B2d Tele-Critical Care to Reduce Rural Health Disparities</i>			
B2f STEER Away from Alcohol and Drugs			
B2g Providing a Medical Home for Underserved Children via Telemedicine			
B3. COMMUNITY PARTNERSHIPS AND OUTREACH PROGRAMS			
<i>B3a Lean Team Initiative</i>			
<i>B3b Community Engaged Scholars – Collaborations in CBPR</i>			
<i>B3c Mobile Outreach Van (MOVENUP) Initiative</i>			
<i>B3d Health Empowerment Zone</i>			
B3e Healthy People in Healthy Communities			
<i>B3f Telemedicine in the Eval. Of AD in a Rural, African American Population</i>			
B3g Evaluating a Media Strategy – Closing the Gap			
B3h CBPR to Improve Oral Health Disparities			
B3i Patient Risk Assessment & Health Ed. w/ Computer Kiosks in CHCs			

TABLE 4. SEVIEW'S Cross-cutting Community Engagement and Empowerment Strategies

italics = funded in SEVIEW Phase I

boldface = funded in SEVIEW Phase II

Objectives/Approaches	Strategies				
	CBPR	Health IT	Health Literacy	Tele-medicine	Work-force dev.
B1 EDUCATIONAL PROGRAMS TO REDUCE HEALTH DISPARITIES					
B1a Public Information and Community Outreach (PICO)					
<i>B1b Community Inst. for Traditional and Nontraditional Leaders</i>					
<i>B1c Health Careers Academy & Junior Faculty Development</i>					
B1d Junior Doctors of Health					
B2 PREVENTIVE MEDICINE, HEALTH AND WELLNESS PROGRAMS					
<i>B2a Stroke Risk Reduction Initiative</i>					
<i>B2b Heart Health Initiative (Preventive Cardiology Research)</i>					
B2c SC TeleSupport (Diabetes Management Initiative)					
<i>B2d Tele-Critical Care to Reduce Rural Health Disparities</i>					
B2f STEER Away from Alcohol and Drugs					
B2g Providing a Medical Home for Underserved Children					
B3. COMMUNITY PARTNERSHIPS AND OUTREACH PROGRAMS					
<i>B3a Lean Team Initiative</i>					
<i>B3b Community Engaged Scholars – Collaborations in CBPR</i>					
<i>B3c Mobile Outreach Van (MOVENUP) Initiative</i>					
<i>B3d Health Empowerment Zone</i>					
B3e Healthy People in Healthy Communities					
<i>B3f Telemed. in the Eval. of AD in a Rural, African American Pop.</i>					
B3g Evaluating a Media Strategy – Closing the Gap					
B3h CBPR to Improve Oral Health Disparities					
B3i Patient Risk Assessment & Health Ed. w/ Computer Kiosks					

TABLE 5. SEVIEW'S Crosscutting Community Engagement and Empowerment Strategies

italics = funded in SEVIEW Phase I

boldface = funded in SEVIEW Phase II

Objectives/Approaches	Representative Health Disparities Targets									
	Primary Care	Alzheimer's/ Aging	Cancer	Diabetes	Heart Dis & Hypertension	HIV/AIDS	Obesity	Oral Health	Substance Abuse	Stroke/ Critical Care
B1 EDUCATIONAL PROGRAMS TO REDUCE HEALTH DISPARITIES										
B1a Public Information and Community Outreach (PICO)										
<i>B1b Community Institutes for Traditional and Nontraditional Leaders</i>										
<i>B1c Health Careers Academy & Junior Faculty Development</i>										
B1d Junior Doctors of Health										
B2 PREVENTIVE MEDICINE, HEALTH AND WELLNESS PROGRAMS										
<i>B2a Stroke Risk Reduction Initiative</i>										
<i>B2b Heart Health Initiative (Preventive Cardiology Research)</i>										
B2c SC TeleSupport (Diabetes Management Initiative)										
<i>B2d Tele-Critical Care to Reduce Rural Health Disparities</i>										
B2f STEER Away from Alcohol and Drugs										
B2g Providing a Medical Home for Underserved Children										
B3. COMMUNITY PARTNERSHIPS AND OUTREACH PROGRAMS										
<i>B3a Lean Team Initiative</i>										
<i>B3b Community Engaged Scholars – Collaborations in CBPR</i>										
<i>B3c Mobile Outreach Van (MOVENUP) Initiative</i>										
<i>B3d Health Empowerment Zone</i>										
B3e Healthy People in Healthy Communities										
<i>B3f Telemed. in the Eval. of AD in a Rural, African American Pop.</i>										
B3g Evaluating a Media Strategy – Closing the Gap										
B3h CBPR to Improve Oral Health Disparities										
B3i Patient Risk Assessment & Health Ed. w/ Computer Kiosks										

B1. Objective B1: Establish an Educational Program to reduce health disparities.

Program initiatives focus on increasing awareness of health issues in communities that bear a disproportionate burden of chronic diseases and address educational deficits related to chronic diseases. The Educational Program includes three initiatives aimed at target audiences at local and national levels and age groups across the lifespan.

B1a. MUSC Public Information and Community Outreach (PICO) Initiative

Director: David Rivers, MA, Associate Professor, Department of Library Science and Informatics

Goals: Heighten public awareness of health issues; provide prevention and health screening opportunities; promote awareness of and access to affordable and culturally competent care.

Distinguishing Characteristic: Recognition of the unique relationship between human health, environmental quality, environmental justice and economic development in determining quality of life.

Program Summary:

Designed to promote healthy communities through heightened public awareness of health issues, prevention and screening initiatives, and improved access to affordable and culturally competent care. Many of these activities recognize and address the health-status disparities that impact our nation's low-income and minority citizens with specific attention on health issues affecting our nation's youth. The goal is to create and explore new and productive partnerships between individual citizens, communities, academic institutions, civic groups, government agencies and private industry. Direct community involvement is central to PICO's success.

The community outreach process begins with initial contact between PICO and community representatives, followed by extensive planning, partnership building and program delivery. PICO leadership suggests the following formats for community outreach efforts to maximize communication and lay public input: the national conference format, the statewide educational television format, and the interactive website format. Through these formats, PICO employs a variety of media to complete outreach efforts. **Table 6** highlights PICO activities and accomplishments since the inception of SEVIEW in July 2010.

Table 6. PICO Activities and Accomplishments (Since July 2010)

ACTIVITY	DESCRIPTION	ACCOMPLISHMENTS
National Conference on Health Disparities (NCHD)	Agenda includes international-caliber speakers and presenters, in individual and panel formats; addresses prevention, social determinants and personal responsibility to reduce health disparities	2010: Philadelphia, PA 2011: Charleston, SC 2012: Little Rock, AR 2013: St. Thomas, US Virgin Islands 2014: Long Beach, CA
Statewide Educational TV: <i>Our Health Series</i>	Examines health-related issues/conditions of particular interest to South Carolinians (Metabolic Syndrome, HIV/AIDS, stroke, cancer, health-status disparities, access to care, youth violence, rural healthcare); employs a viewer-friendly format to deliver information to a statewide audience; the Series has gained a loyal audience of approx. 25K households for each program's initial airdates	2012: <i>America's Armed Forces: Time for a Checkup</i> (http://video.scetv.org/video/2252372276/) 2013: - <i>Our Nation's Health: A Focus on Social Determinants</i> (http://scetv.org/health/) - <i>Zip Code: Your Neighborhood, Your Health</i> (http://scetv.org/health/) 2015: <i>My Health: What's Climate Got To Do With It?</i>
Interactive Website: <i>Hands on Health South Carolina</i>	Platform to reach South Carolinians with important health information and promote healthier citizens and communities across SC; provides resources and links to other high quality and appropriate health and wellness websites; special attention paid to health issues in SC such as: diabetes, heart disease, cancer, asthma, stroke and suicide	<u>Web Address:</u> www.handsonhealth-sc.org <u>Health Exhibits:</u> Health SC staff conducted over 50 comprehensive website presentations to show individuals how to access health resources via the website <u>Statistics:</u> 214,382 new and returning users; total of 403,319 page views

B1b. Community Institutes for Traditional and Nontraditional Leaders

Director: David Rivers, MA, Associate Professor, Department of Library Science and Informatics

Goal: Help communities and constituencies build capacity to identify, access and develop leadership resources.

Distinguishing Characteristics: Integration of health disparities research and public policy directives through linkage of scientific, political and local communities; incorporation/cultivation of nontraditional (artists, musicians, athletes) as well as traditional leaders (elected officials, preachers, lawyers etc.).

Program Summary:

Designed to develop leadership institutes, based on a successful model developed by PICO and other academic and community partners to cultivate productive linkages between the science and public policy communities. SEVIEW empowers community members to complete program-related tasks with the goal of enhancing credibility and cultural competence through Community Leadership (CLIs) and Technical Assistance Workshops (TAWs).⁹ **Table 7** features CLI and TAW programs since the launch of SEVIEW in July 2010.

Table 7. CLIs and TAWs (Since July 2010)

ACTIVITY	DESCRIPTION	ACCOMPLISHMENTS
Community Leadership Institutes (CLIs)	Two-day workshops that focus on matters such as the role of government, youth issues, health disparities, economic development, transportation and housing challenges – all through the linkage of scientific, political and local communities.	Total CLIs: 19
Technical Assistance Workshops (TAWs)	One-day grant writing workshops that teach the community how to locate grant-funding opportunities and prepare and manage a successful grant application.	Total TAWs: 10

B1c. Health Careers Academy and Junior Faculty Development

Director: Sabra C. Slaughter, PhD, Chief of Staff, Office of the President; Associate Professor

Goal: Increase diversity in the healthcare workforce and the health disparities research arena.

Program Description:

Distinguishing Characteristics: Health Careers Academy: One-on-one mentoring, parental involvement, ongoing academic advisement and career tracking. Junior Faculty: Scientific and career mentoring, time management assistance, protected time for research, grantsmanship mentoring, and regulatory training and assistance.

Program Summary:

- **Health Careers Academy (HCA)**

Annually, Academy Fellows take part in a week of clinical and didactic sessions on the campus of the Medical University of South Carolina (MUSC). HCA is designed to increase the acceptance, retention, and graduation rates of under-represented minority and disadvantaged students to nursing, dental, medicine and pharmacy training programs in South Carolina.¹⁰ The Academy is conducted in collaboration with the South Carolina AHEC, MUSC College of Nursing, College of Dental Medicine, College of Medicine, College of Health Professions, Library and the South Carolina College of Pharmacy. Classroom lectures and project topics focus on several health disparities prevalent among South Carolinians. Participants are seated using a competitive application process and must meet the following criteria:

- Reside in South Carolina and/or be currently enrolled or accepted for enrollment in an accredited college or university for the fall of the enrollment year
- Have a strong interest in pursuing a career in nursing, dental medicine, medicine or pharmacy
- Be 18 years old by the start of the Academy

- Have a cumulative grade point average of 3.0
- Have completed the requirements for a high school diploma or G.E.D. prior to the start of the Academy
- Dental and Pharmacy Career Academy applicants must have completed a minimum of 12 hours of academic credit from an accredited college/university

SEVIEW funding contributed to four HCAs during the life of the award (see **Appendix N**) and over 119 students participated. Each HCA is held on the MUSC campus and represented the following SC counties: Berkley, Charleston, Dorchester, Greenville, Greenwood, Horry, Lexington, Orangeburg, Richland, Spartanburg, Sumter, and York. The HCA agenda was designed to meet the academic, professional, and personal needs of the participants to support matriculation to health professions education. Other details of the HCA include:

- Student Areas of Interest
 - Dental Medicine
 - Medicine
 - Occupational Therapy
 - Pharmacy
- Program Agenda
 - Collaborative Learning – IP Case Study
 - Didactic Education
 - Childhood Obesity
 - Collaborative Health Promotion
 - Program Agenda Topics
 - Financing Health Professions Education
 - Professionalism
 - Team Building
 - Public Speaking & Tips for Presenting
 - Presentation Development
 - Career Exploration
 - Research
 - SC's Population Health Data
 - Research Resources & Techniques
 - Careers in Research
 - Gross Anatomy Lecture & Lab
 - Student Success Workshops & Activities
 - Professional Networking
 - Individual Academic Advising
 - College-specific Admissions
 - Creating Your Personal Statement
 - Peer Mentoring by MUSC Students
 - Experiential Learning
 - Career-specific Clinical Simulations
 - Clinical Observation
 - Service Learning Projects
 - MUSC Urban Garden
 - MUSC Gives Back/Hollings Cancer Center Sock Project
 - MUSC Gives Back/ Hollings Cancer Center Operation Heart
 - Professional Networking
 - Team Building
 - IP Team Challenge Poster Presentations

- **Junior Faculty Development**

SEVIEW extends training and professional development programs aimed at junior faculty development (JFD). The SEVIEW JFD program provides protected research time for health disparities research and regulatory training. The purpose is for the participants (Debbie C. Bryant, RN, MSN, DNP and Ida J. Spruill, RN, MSN, PhD) to gain practical experience with:

- Conducting community-base health promotion intervention research and practice with individuals in South Carolina
- Identifying and facilitating skills and resources to enhance intrinsic community capacity
- Training with intervention delivery and evaluation
- Regulatory training and maintaining quality control of study/outreach implementation
- Ensuring scientific and ethical integrity of study/service
- Reporting results of study/service outcomes.

Drs. Bryant and Spruill have made significant progress since the inception of the program. Please see **Table 8** for summary of the Junior Faculty Development participants' accomplishments.

Table 8. JFD Participant Accomplishments

Junior Faculty Development Participant	Accomplishments
<u>Debbie Chatman Bryant, DNP, RN</u> (College of Nursing Faculty Member)	The JFD funds allowed Dr. Bryant to <u>complete the Doctor of Nursing Practice (DNP) program</u> at MUSC that addresses the most contemporary aspects of expert clinical practice and in depth knowledge and experience in leadership, health systems design and evaluation, evidence-based practice, health policy, and applied research. Dr. Bryant recently received a <u>promotion to Director of Partnerships for Healthcare Quality Research</u> at MUSC. The JFD program has also provided her with practical experience in conducting community-based health promotion intervention research and practice with individuals in SC through her work with the <u>Avon Foundation</u> , the Robert Wood Johnson Foundation (RWJF) and the <u>Community Compass Project</u> . The <u>Robert Wood Johnson Foundation</u> recognized her as one of 20 nurses from across the United States selected as RWJF Executive Nurse Fellows for 2014
<u>Ida Spruill, PhD, RN</u> (College of Nursing Faculty Member)	Dr. Spruill recently <u>received the FY 2012 Presidential Early Career Awards for Science and Engineering (PECASE) Award</u> . This award is the highest honor bestowed by the United States Government in science and engineering professionals in the early stages of their independent research careers. Dr. Spruill recently received a <u>promotion to Associate Professor</u> at MUSC. Dr. Spruill is the Co-PI on a <u>recently funded R-21 grant</u> entitled, "Glycation as a Mechanism Promoting Cancer Disparity". She also continues to recruit partners to develop community education seminars for Orangeburg and Dillon County.

B2. Objective B2: Establish a Preventive Medicine, Health and Wellness Program to reduce health disparities.

Program initiatives will expand proven strategies and/or develop novel methods to engage communities and remove barriers to effective healthcare. This objective includes four initiatives.

B2a. Stroke and Stroke Risk Reduction Initiative (SSRI)

Director: Robert Adams, MD, Professor of Neurology; Director of the South Carolina Center of Economic Excellence; Director of the MUSC Stroke Center

Goals: Extend access to expert stroke care to SEVIEW regions, which have very high stroke incidence, morbidity and mortality rates; develop stroke-related CME/CEU-certified education for healthcare providers.

Distinguishing Characteristics: Hub-and-spoke model integrating information technology (IT) and health information technology (HIT) with highly specialized medical expertise to deliver expert care in rural/remote areas; collaborations and mentoring between academic medical center experts and community-based providers; time-critical, cost-effective delivery of evidence-based medicine that can save lives, reduce risk of permanent disability, and improve quality of life.

Program Summary:

South Carolina lies in the “buckle” of the Stroke Belt, suffering from a disproportionate burden of many chronic maladies including hypertension and stroke. The problem is compounded by the rural nature of the state and the ethnic and socio-economic disparities that amplify the incidence, prevalence, and complications associated with these diagnoses. With escalating health care costs impacting federal, state, and employer budgets, the economic consequences of disparities could be a key driver to effecting change, improving the quality of care for many Americans, and ensuring a military-ready population. The Stroke and Stroke Risk Reduction Initiative (SSRI) proposes to address these issues by enhancing the REACH (Remote Evaluation of Acute Ischemic Stroke) telemedicine system to attain earlier identification and management of patients with hypertension, especially those who are young and rural. The focus is on education, novel use of REACH Telemedicine, and to target stroke-related areas of disparity. These efforts are relevant because: we have far too many strokes, too many young persons are having stroke and too few patients are being treated urgently for stroke.

The aims of this initiative are to: (1) Define and characterize the primary regions of interest; (2) Benchmark regions with and without REACH and evaluate the impact of telemedicine with regard to: access to care, awareness of stroke symptoms, appropriate response to stroke, attitudes regarding treatment, time from onset of symptoms to Emergency Department, and use of Alteplase (tPA); (3) Provide targeted stroke and stroke prevention CME programs to health providers in the ROI. As a refinement to these initial aims, SSRI has also: (4) established an Epidemiology Core; (5) developed and submitted its first research protocol for IRB/TATRC approval; (6) expanded and improved access to stroke care through REACH; and (7) developed an administrative framework that supports SEVIEW’s vision of developing “a nationally recognized multidisciplinary, inter-professional team of researchers, educators, outreach professionals and laypersons to eliminate health disparities.”

As a component of the MUSC Stroke Center, SSRI established the SSRI administrative framework from which we defined and characterized the regions of interest that would be used for this research. The primary investigators, Robert J. Adams, MS, MD and Daniel Lackland DrPH, recruited a multidisciplinary, inter-professional team of researchers, educators, and outreach professionals. The SSRI team now includes neurologists, emergency medicine physicians, nurses, administrators, epidemiologists, health economists, disparities experts, research specialists, outreach personnel and others.

Potential partners are invited regularly to the weekly SSRI meetings and numerous collaborations have been created or expanded. The Regions of Interest (ROI) was defined and characterized with the disparities data collected. This approved SEVIEW Regions of Interest are

Figure 4. Aim 1: Regions of Interest



depicted in **Fig 4.** and can be seen on the SEVIEW website. The two primary ROIs are the I-95 Corridor and Coastal Carolina – the regions where health disparities in S.C. are highest.

After the completion of **Aim I**, we refined it into two new/revised aims to support the original scope of work:

- **Aim I: SSRI Program Administration:** Maintain a strong, multidisciplinary team able to support program aims in a collaborative manner.
- **Aim IV: Epidemiology Core:** Developed Epidemiology Profiles & began to acquire/maintain overall data sets as a common resource for all SEVIEW cores.

Aim I: SSRI Program Administration

The SSRI Team has continued its work; supporting and refining the aims of SEVIEW and SSRI while presenting and promoting these aims and early research findings in a variety of public forums and media venue. SSRI investigators and/or their representatives consistently participated in all SEVIEW meetings and completed all required reports, while developing numerous administrative tools to support these efforts including an action-oriented weekly meeting agenda. The team met with the SEVIEW evaluation consultants, who have been invited to attend an SSRI meeting in the near future, and continue to track and report on their activities each quarter.

The SSRI Team continues to submit and follow up with requests to the ORS for current data. The “Reaching Into RHIO (Regional Health Information Organization)” study’s primary objective will be the evaluation of the potential benefit of linking to the ORS database with REACH MUSC telemedicine system for acute treatment of ischemic strokes at Spoke (consulting ED’s) sites. The results will be used to design interventions for improved stroke care focused on secondary stroke prevention.

Aim II: Benchmark regions with and without REACH and evaluate the impact of telemedicine with regard to: (A) Access to care; (B) Awareness of stroke symptoms, appropriate response to stroke, attitudes regarding treatment; (C) Time from onset of symptoms to Emergency Department; and (D) Use of Alteplase (tPA)

Data was collected where available and preliminary baseline analyses continued. The research study protocol developed, which proposed to conduct both primary research and secondary analyses to address this aim, is still in focus, including the SSRI Protocol. This SSRI Protocol was one of the first in SEVIEW to receive MUSC Institutional Review Board (IRB) approval (Protocol #00008039). The Protocol was then submitted to TATRC for final approval, along with a scientific letter from the IRB (dated February 25, 2011). **Final TATRC approval was received on January 25, 2012.**

Aim II-A: Access to Care

Completed using existing and publically available resources. The map seen in **Appendix B** shows the dramatic affect that a telemedicine solution can have upon access to expert stroke care; illustrating how few Primary Stroke Centers there are in S.C. and how REACH has improved geographic access to stroke resources. **It was noted, “With REACH, 76% of South Carolinians now are within a 60-minute drive of tPA treatment compared to 38% prior to REACH. The percent increase in access was highest along the I-95 corridor; a predominantly rural, high disparities region of S.C.”** The findings from this original access analyses were refined and accepted as poster presentations and a published article: Kazley AS, Wilkerson RC, Jauch E, Adams RJ: Access to expert stroke care with telemedicine: REACH MUSC. Front. Neur. 3:44. doi: 10.3389/fneur.2012.00044. Epub 2012 Mar 21. **Milestone:** Concerted efforts to increase rt-PA use in SC are expected to save money for payers in addition to improving quality of life for many stroke survivors. June 8-10, 2014: Academy Health’s 2014 Annual Research Meeting (ARM), at the San Diego Convention Center. Abby Kazley, PhD. Abstract: Cost of Stroke in South Carolina.

Aim II-B: Examine awareness of stroke symptoms, appropriate response to stroke, and attitudes regarding treatment

A survey of all patients having a REACH Telestroke consult was developed and tested. SSRI has moved forward by communicating with all REACH MUSC hospital leaders, notify them of this research proposal, and

provide copies of the patient materials, while also requesting their input and support for this upcoming research initiative. Patient survey data was collected and entered into Red Cap Survey. **Milestone: Malek AM, Adams RJ, Debenham E, Boan AD, Kazley AS, Hyacinth HI, Voeks JH, Lackland DT.** Patient Awareness and Perception of Stroke Symptoms and Use of 911. **May 2014.** DOI: 10.1016/j.jstrokecerebrovasdis.2014.05.011.

Aim II-C: Time from Onset of Symptoms to Emergency Department (a.k.a. Onset-to-Door time)

It is SSRI's intention to obtain Emergency Medical Services (EMS) "run sheets" on all REACH patients that used EMS. With these data, SSRI will determine: (1) fraction of patients who used 911, (2) fraction of calls dispatched as a stroke, and (3) time interval from onset of symptoms to activation of 911. Early on a data request was developed, reviewed and submitted to the S.C. Department of Health and Environmental Control (DHEC) for two NEMISIS II data sets: one identified for REACH patients and one de-identified for all patients. In August 2011, an application for database was submitted and we met with the review committee to resolve any issues. The committee approved this application September 2011. Parameters and variables were received in association with that database in November 2011, and a formal request has been made for these new parameters.

While waiting for DHEC's release of the data, we began conducting preliminary analyses of critical time points in the REACH database for benchmarks. Knowing that delays occur prior to the patient arriving at the hospital are the primary contributors to the overall delay in stroke care (leading to worse stroke outcomes and mortality), we began to examine the feasibility of conducting a community-based assessment regarding the public's attitudes/opinions related to this issue with the intent of examining potential interventions. A goal we completed was for the SSRI to connect with colleagues in the Center for Community Health Partnerships, sponsors of the SEVIEW Community Engagement Scholars Program. Together we created the Community Engaged Assessment to Eliminate Stroke (CEASE) proposal and submitted it to the South Carolina Clinical & Translational Research Institute (SCTR) Pilot Project Program for funding. Funding was received from the SCTR Institute for this pilot project program and SSRI is involved with CEASE to work with its community partners. This initiative was exploring facilitators and intervention strategies to acute stroke care with Focus Group and Key Informant Interviews in the Georgetown, SC area. This is located in the Coastal Carolina County Region (**Appendix C**).

Aim II-D: Use of Alteplase (tPA)

Early analyses indicated that the use of tPA was very low in South Carolina prior to the advent of the REACH MUSC Telemedicine Network (REACH). Currently with REACH, tPA has been given over 750 times since the programs inception in 2008 with the 6 original sites and expanding to 13 sites currently participating (**Appendix D**). While these REACH figures are continually impressive, **this aim is focused on comparing use of tPA among non-REACH sites with those that have had REACH** for at least 12 months. For this aim, **we have requested two data sets** from the S.C. Office of Research and Statistics (ORS). The application for data was submitted September 2011 to ORS and the unrestricted dataset released. However, the linked dataset containing restricted data which is needed to make this comparison was not be released until the research protocols were approved by TATRC on January 25, 2012.

Aim III: Providing targeted stroke, stroke prevention and sickle cell disease continuing medical education (CME) to health providers in the ROI and beyond

This curriculum of approved CME stroke programs was developed by the team and with input from a designated partner in the ROI. SSRI collaborated with the S.C. Area Health Education Center (AHEC) to assess training needs and appropriate use of the South Carolina Health Occupations Outreach Learning System (SCHOOLS) distance-learning network. We continue to use this tele-training system and have had more speaker presentations on stroke. The SSRI Stroke CME series (**Table 9**) will continue to be presented across this tele-training network.

Table 9. Stroke CME Training Program Library

TITLE	PRESENTER	BROADCAST DATE	OUTLINE PROGRAM LINKS
Selection of Drugs in Hypertension: Does it Make a Difference	William Cushman, MD	6/9/2014	TBA
Initial Treatment Approach and Strategies for the Management of Hypertension: A Model for Success	Joel Handler, MD	3/31/2014	TBA
Social Determinants and the Disparities in Stroke Risks	Gbenga Ogedegbe, MD, MS	12/9/2013	TBA
Social Determinants of Health: Race and Diabetes	Leonard Egede, MD, MS	10/8/2013	http://www.scahec.net/schools/programs/2013.10.08.social_determ.html
Social Determinants of Health: Diabetes Risks and Management in the Stroke Patients	Brett Kissela, MD	8/28/2013	http://www.scahec.net/schools/programs/2013.08.28.social_determ.html
Social Determinants of Health: Race and Stroke	Bruce Ovbiagele, MD, MSc	8/27/2013	http://www.scahec.net/schools/programs/2013.08.27.social_determ.html
Racial Disparities in Stroke: Maybe it's Hypertension After All?	George Howard, DrPH	8/23/2013	http://www.scahec.net/schools/programs/2013.08.23.social_determ.html
Race and the Social Determinants of Stroke	Virginia Howard, PhD	8/22/2013	http://www.scahec.net/schools/programs/2013.08.22.social_determ.html
Renal Disease and Stroke Risk	Raymond Townsend	7/29/2013	TBA
CME Website - http://scahec.net/schools/library.html			

The team continues the planning and preparing of continuing medical education program for MD's, PA's, NPA's, PharmD's and others. The two completed module series are Acute Stroke Management and Social Determinants.

The CME format will continue to be administered in both a traditional, "live" audience venue and across the state utilizing the SCHOOLS distance learning technology. This has increased the breadth of the CME offering by expanding access to the live broadcast to locations throughout the state. Perhaps more importantly, use of the SCHOOLS system allowed the Stroke CME programs to be preserved as enduring materials. This allows health professionals with Internet access to receive high quality stroke-related training and corresponding CME credits at their convenience. **This opportunity is now available to military health professionals.** Table 9 offers an overview of topics and provides links to access the programs as enduring materials. Further detail regarding this CME stroke series, may be found by accessing the CME website¹¹.

The SSRI team has created specific REACH Site teleconferencing meetings. This allowed the CME group, REACH program manager and administrator to highlight a topic of specific interest to this group of REACH sites. Also, they will be able to review current accumulative data of all the sites using the telemedicine system for acute stroke care. This review will reveal to them their strengths and weaknesses as a whole in order to improve the length of time for stroke consults and care. Also under this education aim, the SSRI team has added an important goal to "**Educate the Next Generation**" (Aim III-E). Mentoring young health professionals and students in the area of stroke and stroke risk reduction adds sustainability to these efforts and

may positively impact future stroke programs (**Fig. 5**). These individuals contributed to several poster presentations were responsible for assisting on some publications.

Figure 5. Strike Out Stroke Mentors

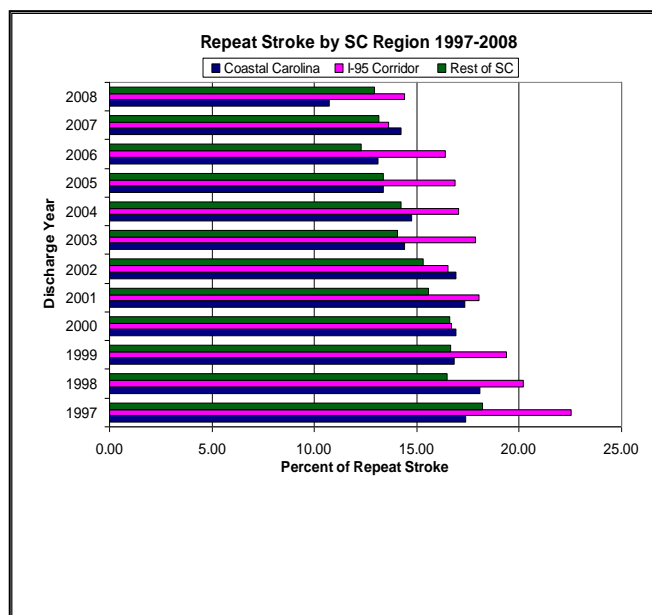


July 25, 2013 - “Strike Out Stroke” campaign (**Fig. 5**): Charleston Riverdogs baseball game. This is a blood pressure screening event for the public attending the RiverDogs baseball game. The trainees and mentors of the MUSC Stroke Center encouraged the fans of the Riverdogs team to become aware and educated about blood pressure. Over 150 blood pressure screens were given to public and the fans were also able to meet the Pro Football Hall of Fame member, Joe DeLamielleure. Organized by Daniel Lackland, DrPH and Andrea Boan, PhD.

Aim IV: Epidemiology Core

Evolved when early efforts related to Aim I demonstrated: (1) a need to develop Epidemiology Profiles depicting the ROI and (2) the importance of acquiring and maintaining standardized data sets as a common resource for all SEVIEW cores. This Epidemiology group was established under the leadership of SSRI Investigator, Daniel Lackland, DrPH. As noted, this group completed the Aim I by defining and characterizing the ROI and presenting these findings to the SEVIEW team. The group also began to collect a variety of data sets including emergency room, hospital, socioeconomic status (SES) and census data. The team began analyzing these data by ROI, validating the assumption these regions suffer from greater health disparities and reporting these findings to the other SEVIEW cores as requested. An interesting sample of the types of stroke data found in these early summary reports is provided as **Fig. 6**, which shows a history of consistently higher repeat stroke among hospitalized patient residing in the I-95 Corridor as compared to the rest of S.C.

Figure 6. Epidemiology Sum



Aim V: Stroke Care

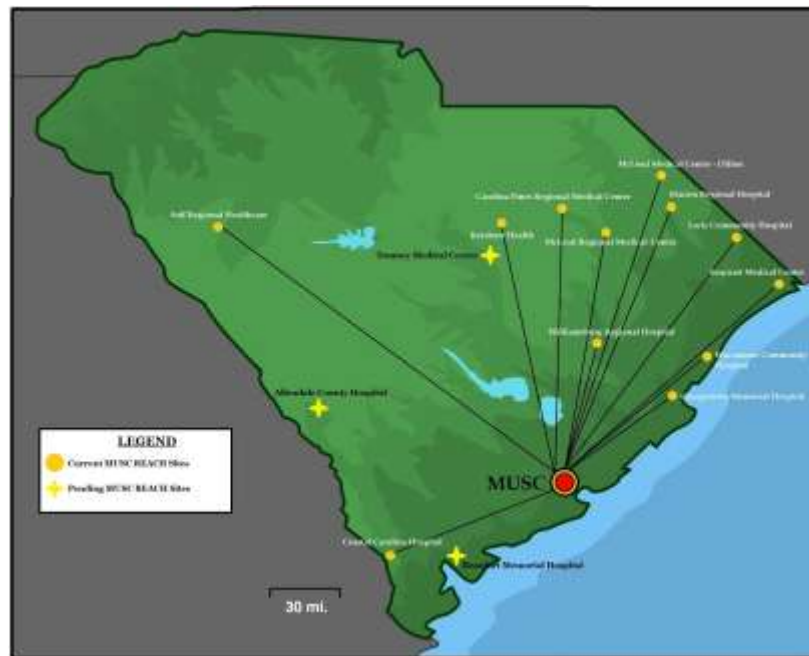
Focuses on an SSRI core responsibility, which is “to address these (stroke) issues by enhancing the REACH telemedicine system.” REACH MUSC is not just a technology, but a robust partnership between South Carolina’s rural and community hospitals and the MUSC Stroke Center; one of only nine JCAHO-designated Primary Stroke Center (PSC) and the only Comprehensive Stroke Center in the state. **SSRI is**

focusing on three methods of improving access to care by enhancing REACH: (A) site expansion, (B) program expansion and (C) patient care/follow-up.

Aim V-A: Site Expansion

This refers to a continued expansion of geographic access to expert stroke care achieved by adding sites to the existing REACH Tele-Stroke Network. Currently discussions with potential sites in the Coastal Carolina and the I-95 Corridor Regions are in process. The REACH Tele-Stroke Network currently contains 13 hospitals with 2,031 hospital beds and 379,875 emergency room visits per year (**Fig. 7**). Since its inception in 2008, this network has facilitated over 4,388 consultations, with 778 receiving tPA (**Appendix D**).

Figure 7. FY13 REACH MUSC Tele-Stroke Network



Data collected from these consultations provides a wealth of materials used in much of this SSRI research. There were two articles published in *Frontiers in Neurology*; “Access to expert stroke care with telemedicine: REACH MUSC”, by Abby Swanson Kazley, PhD and “REACH MUSC: a telemedicine facilitated network for stroke: initial operational experience”, by Robert J. Adams. Both of these publications provide excellent overviews of the REACH program, the network, its technologies and early findings demonstrating the viability of this telemedicine-facilitated network for urgent stroke care. The Stroke Center Directors and team produced the “Stroke Quarterly Newsletter” (**Appendix E** - first page of newsletter), which was distributed to patients and physicians across the state of SC. The newsletter covers stroke education, awareness and publications. We continue discussing the possible integration of in-patient coverage via the REACH system with our sites. Also, we are working with Dee Ford, MD on her project, *Tele-Critical Care Program to Reduce Rural Health Disparities* to collaborate on her telemedicine technology and provider education design efforts. REACH Equipment will be upgraded to allow for this program to go into effect. **Milestone:** The technology for the telemedicine program has “gone live” and will offer multiple specialty services to our REACH Sites. An equipment upgrade has been completed for the REACH MUSC Sites.

Aim V-B: MUSC ECareNet Physician Portal; Patient Care Follow-up

The telehealth program was implemented to allow physicians and hospital staff access to their referred patients’ medical records at MUSC; offering continuity of care directly from their community hospital. REACH staff collaborated with the MUSC Physician Liaison Program to introduce the E-Care Net Viewer/Oasis program to our REACH partner sites. The Portal was first introduced to each *new* REACH sites during that site’s initial implementation training program, at which time their providers learned how to register for OASIS

access. Additionally, the REACH staff provided liaisons with contacts at all *existing* REACH sites so that they might further dissemination program information and registration providers at these partner sites.

The second effort supporting Aim IV-C, we are continuing the development of a **multimedia program which seeks to “Tell the Story” of stroke** by presenting patient and family experiences with REACH and the MUSC Stroke Center. This serves both as a means of documenting qualitative patient care information and demonstrating the actual connection with patients. Audio-video compilation of patient and family stories was developed and is now posted online, as well as available in DVD form for. An ongoing process is to continually collect and disseminate these patient stories depicting actual stroke care experiences. We have been able to have our Public Relations department post these as testimonies on our stroke website.

B2b. Heart Health – Preventive Cardiology Research Center

Director: Melissa Henshaw, MD, Associate Dean for Advocacy and Advancement; Assistant Professor of Pediatric Cardiology; Medical Director of Heart Health

Goals: Analyze resource allocation patterns and prioritize areas of need to deliver preventive cardiology and weight management services to medically underserved children; streamline data management efforts to facilitate flow of information among providers; develop data analysis methods to assess outcomes across cardiovascular risk parameters and co-morbid conditions; extend volunteer involvement and community engagement.

Distinguishing Characteristics: A collaborative network of pediatric heart care providers, working with MUSC’s Children’s Heart Center, form a unique platform for outreach to rural and other medically underserved children and families with known cardiovascular risk factors such as hypertension, pre-diabetes and dyslipidemia.

Program Summary:

Heart Health dually serves as both the weight management program of the MUSC Children’s Hospital and the preventive cardiology service of the MUSC Children’s Heart Center. Heart Health is a comprehensive pediatric obesity program with medical, nutrition, behavioral, and fitness components. The program addresses the root causes of cardiovascular health disparities through a multi-disciplinary approach to the treatment of pediatric obesity and its attendant cardiovascular risk factors. Heart Health serves patients ages 2 through 22 who are affected by childhood obesity and cardiovascular disease risk factors such as hypertension, pre-diabetes, and dyslipidemia. Over 90% of Heart Health patients are from traditionally under-served minority families with limited financial means, with approximately 75% of our patients insured through Medicaid. Almost half of our patients have the metabolic syndrome, and 85% of Heart Health patients have at least 2 cardiovascular risk factors at presentation. Through a series of medical evaluations, one-on-one nutrition education and behavioral counseling visits, group education classes, age-appropriate fitness sessions, and other related activities, Heart Health teaches children and families how to improve their nutrition, activity, and lifestyle-related behaviors to manage weight and improve cardiovascular risk. In addition to the comprehensive clinical services offered through Heart Health, the Preventive Cardiology Research Center provides a variety of school and community engagement services and pipeline training activities that are centered on the reduction of childhood obesity and pediatric cardiovascular health disparities through outreach, education, and research.

Administration:

Melissa Henshaw, MD, MSCR, DHA, continues to direct both Heart Health and the Preventive Cardiology Research Center. Yar Chowdhury, MD, completed his fellowship training in pediatric cardiology and continues on as a faculty member with the Center, focusing on cardiovascular imaging. Tiffany Williams, DNP, PNP, joined Heart Health after completing her residency and graduating from the MUSC Doctoral Nursing Program, in addition to participating in the SEVIEW Junior Faculty Development Program (JFDP). Janet Carter, MS, RD, is our program manager and Molly Jones, RD, serves as our clinical dietitian. Kyle Kelly is our fitness specialist and coordinator; he will begin medical school at MUSC in 8/14. Robyn Haertel is our administrative assistant and clinic scheduler. Tom Hulsey, ScD, also supports the Preventive Cardiology Research Center, providing critical statistical analysis for core projects.

Former members of our team have moved on to exciting new directions. Phil Saul, MD, director of the Children's Heart Program of SC, has taken on a new role as chair of the Department of Pediatrics at Nationwide Children's Hospital in Ohio. Girish Shirali, MD, is chief of the division of pediatric cardiology at Mercy Children's Hospital. Brad Friedman, MD, joined a private pediatric cardiology practice in NC after his year with the Center. Tony Hlavacek, MD, remains with the division of pediatric cardiology here, devoting most of his time to invasive cardiac imaging. Christine Carter-Kent, MD, also remains at MUSC in the division of pediatric gastroenterology, where she focuses primarily on clinical care and hepatic steatosis research. Maggie McDaris, RD, left MUSC to serve as a missionary. Chrissy Andrews, MSW, moved to Florida with her husband after his graduation from the MUSC Physicians Assistants program. Sarah Stein is currently pursuing her master's degree in exercise science at The Citadel.

Clinical Progress:

Heart Health was initially designed to accommodate 10 new patients/month. The program was limited at this level until external support was secured through SEVIEW in 7/10 and from The Boeing Company in 1/11, allowing us to develop the range and scope of Heart Health's services throughout the MUSC catchment area. This support has allowed the program to grow from an obesity treatment Stage 2 (structured weight management) model to a Stage 4 (tertiary care) model, as recommended for children's hospitals by the American Academy of Pediatrics. Heart Health has more than tripled in size since 2010, with continued rapid expansion. From an initial service line of 4 clinics and 1 group session per week offered at one location, we have gradually expanded to add an additional service site each year. We now offer 4 clinics/week in downtown Charleston, 4 clinics/week in North Charleston, 4 clinics/week in Summerville, and 2 clinics/week in Mount Pleasant, SC. We also offer 2 telemedicine clinics/week, 2 group sessions/week (downtown and in North Charleston), and fitness sessions 6 days/week (downtown at The Citadel on Monday through Friday afternoons and in North Charleston on Saturday mornings). We are also providing summer camps again this year, and staff a number of community and school educational events throughout the year. Dr. Henshaw is the only pediatrician in SC who is also board certified in Obesity Medicine, and will also serve as the Pediatric Medical Advisor for the new Adolescent Bariatric Surgery Program at MUSC. She serves on a number of national workgroups and committees, most recently adding the Pediatric Lipidology Executive Committee of the National Lipid Association.

Scientific Progress:

The Preventive Cardiology Research Center continues to provide vital pipeline training for students, residents, and fellows. In addition to serving as the principal investigator of the SCTR-supported Pediatric Metabolic Syndrome Study and Director of the SEVIEW Preventive Cardiology Research Center, Dr. Henshaw also serves on the Clinical Trial Committee and as site PI of the NHLBI Pediatric Heart Network's Dyslipidemia of Obesity Intervention Trial (DO IT!). She also serves on the Protocol Development Committee and as site PI for the NHLBI Pediatric Heart Network's Dyslipidemia of Obesity Intervention Trial Ancillary Study: Impact of Healthy Lifestyle Patterns (I HeLP DO IT!). Dr. Henshaw has been fortunate to serve as mentor for Tiffany Williams, DNP, PNP, during her DNP residency and for the SEVIEW Junior Faculty Development Program. In 2013, Dr. Williams was selected to attend the Robert Wood Johnson Foundation's New Connections Annual Symposium, as well as the Program to Increase Diversity in Cardiovascular Health Research (CVD-PRIDE) at SUNY Downstate.

Yar Chowdhury, MD, has completed his three-year NIH T32 research project with the Preventive Cardiology Research Center on the impact of 3D echo and carotid intima-media thickness (cIMT) measurements in the early detection of left ventricular hypertrophy and atherosclerosis in obese children and adolescents. He received a Career Development Award from the American Society of Echocardiography in 2012 to support further research into health disparities in cIMT findings from the Pediatric Metabolic Syndrome Study. This work was presented at the MUSC Obesity Scientific Retreat in 10/12, and Dr. Chowdhury was selected as a finalist for the Young Investigators Award competition at the American Society of Echocardiography's national meeting in 2013. Dr. Chowdhury also received a Research Fellowship Award from the American Academy of Pediatrics Section on Cardiology in 2013 to further support our cardiovascular

imaging research. The Center published its initial paper from the Pediatric Metabolic Syndrome Study in 2014, in the journal of the American Society of Echocardiography (**Appendix F**).

The Center has also supported the research efforts of a number of students and residents, including three MUSC Summer Health Professionals students with interests in pediatric cardiovascular health disparities research (Jennifer Paige, Brielle Weinstein, and Selina Juarez). Since SEVIEW funding began, we have had twenty abstracts accepted for presentation at local, regional, and national meetings. Please refer to the *Reportable Outcomes* section of this report to see a list of our abstracts.

B2c. SC TeleSupport: Diabetes Management Initiative

Director: Leonard E. Egede, MD, MS, Professor, Department of Medicine

Goals: Long-term: Develop a sustainable system of diabetes management to help low income patients achieve and maintain goals within established treatment guidelines regardless of geographic location. Immediate: Employ info tech to improve patient-provider communications and patient adherence to prescribed therapy.

Distinguishing Characteristics: Widespread penetration of cell phone technology presents an opportunity to employ a technology familiar to most, regardless of socioeconomic status or location. This project will conduct a randomized clinical trial project using CONFIDANT, an inexpensive, off-the-shelf cell phone technology whereby a person/caregiver and a provider can communicate data accurately, and the innovative FORA system, an inexpensive, off-the-shelf health technology with a 2-in-1 Blood Glucose and Blood Pressure monitor, coupled with nurse case management to optimize diabetes care for low income, rural adults with type 2 diabetes. The target population will be low-income patients served in Federally Qualified Health Care Centers (FQHCs) with poorly controlled T2DM residing in coastal South Carolina.

Program Summary:

The long-term goal was to develop a practical and sustainable system of diabetes management that will help low income patients achieve and maintain goals within established treatment guidelines regardless of geographic location. This randomized clinical trial employed the innovative FORA system, an inexpensive, off-the-shelf, state-of-the-art technology comprised of a 2-in-1 blood glucose and blood pressure monitor, coupled with nurse case management to optimize diabetes care for low income, rural adults with type 2 diabetes. The primary outcome was hemoglobin A1c (HbA1c) at 6 months post-randomization while the secondary outcomes was blood pressure control and quality of life at 6 months post-randomization.

Year 1

First quarter: we hired staff and conducted negotiations for purchasing equipment and supplies needed to conduct the study. We also initiated collaborations with the federally qualified health centers (FQHC's) to build relationships and establish rapport with the clinic management and staff.

Second quarter: we continued the process of hiring staff and conducting negotiations for purchasing equipment and supplies needed to conduct the study. We also continued to conduct collaborations with the federally qualified health centers (FQHC's) to build relationships and establish rapport with the clinic management and staff. We met with the staff physicians at the health centers and used their feedback to generate a proposal conducive to the needs of the patients they service. Based on the results of participatory research meetings with the center staff, we established algorithms for the titration of blood sugar and blood pressure medications prescribed to the patients. The nurse case manager utilized the algorithms during the course of the study.

Third quarter: we hired staff and continued negotiations for purchasing equipment and supplies needed to conduct the study. The staff members were given instructions and trained on use of the device. The devices were piloted to assess its usability and function, in order to anticipate and reduce foreseeable issues that may arise when given to the participants. The staff members also attended diabetes educational sessions for information about diabetes and hypertension, medication management, self-care techniques, symptoms, and possible outcomes. We continued to conduct collaborations with the leadership at the federally qualified health clinics (FQHC's), to build relationships and establish rapport with the clinic management and staff. Based on our progress with the FQHC leadership, we submitted a proposal and all pertinent materials to the MUSC IRB

and received approval contingent upon establishing an IRB Authorization Agreement between Franklin C. Fetter and MUSC. On April 20, 2011, all final and approved documents were submitted to Mr. Jeffrey Stephens for submission to the ORP HRPO for approval.

Fourth quarter: we received approval from the MUSC IRB #2. At the time, we were still awaiting approval from TATRC. We needed the secondary approval from TATRC to begin recruitment efforts: requesting a list of individuals who were eligible for participation in the study. Our goal was to recruit 50 participants for randomization to either usual care or the intervention group. These individuals were recruited from FQHC's within the local Charleston community. We continued to train the staff on use of the FORA equipment and conducted educational sessions on diabetes and hypertension. We continued to discuss medication titration guidelines with the nurse case manager.

Year 2

Fifth quarter: we finalized negotiations for the device with the FORA Care Telehealth group. We assessed the device for usability and function. All additional equipment such as: filters and Ethernet splitters were purchased and applied to devices as necessary. We continued to foster collaborations with other researchers, and integrated with the FQHC staff. We hired and trained a research assistant and data coordinator on the study protocol and the FQHC processes. We established a comprehensive understanding of the functioning of the Summerville FQHC. We obtained a list of potential participants from FQHC and began to determine eligibility.

Sixth quarter: we began enrollment by recruiting from the Summerville site and enrolled 20 participants. Medication titrations started on participants that were in the intervention group. We obtained permission to include the Enterprise site and started recruitment efforts there. We considered the Johns Island location for the next site of recruitment if recruitment goals were not met at the two initial sites.

Seventh quarter: we continued to increase enrollment by recruiting from two sites within the Franklin C. Fetter system (Enterprise and Summerville locations). Overall, we enrolled 46 participants into the study, 28 from the Summerville site and 18 from Enterprise. Twelve participants returned for their 3-month follow-up. In this quarter 5 participants withdrew from the study for reasons such as: family or personal illness, relocation, and difficulties with transportation. Most participants uploaded their readings, and medication titrations were started. We were able to trouble shoot with those who were randomized to the intervention group and experienced difficulties with the device usage.

Eighth quarter: we continued recruitment and enrollment efforts. We were meeting our monthly goal of enrollment; therefore, we did not start recruitment at the Johns Island location. We may consider recruiting from the Johns Island site towards the end of the quarter. We have 61 participants enrolled, 39 of which are in the intervention group. During this quarter 2 participants withdrew from the study due to difficulty with transportation and inability to make time for participation.

Year 3

As we began this year and quarter, we continued to increase enrollment by recruiting from three sites within the Franklin C. Fetter system (Enterprise, Summerville and Johns Island locations). We were approved August 10, 2012 to start recruitment at the downtown location. At this point in the study, we enrolled 69 participants: 31 from Summerville, 3 from Johns Island, and 40 from Enterprise. Twenty-six participants completed the study, and 46 completed three months follow-up appointments. Most participants uploaded readings, and the nurse titrated medications to control abnormal levels observed in "real-time" using the telemedicine device.

In an effort to increase the number of patients available for recruitment (as we started the next quarter), we added two clinical sites. This increased the number of clinical sites within the Franklin C. Fetter system to five (Enterprise, Summerville, Downtown, Hollywood, and Johns Island locations). We enrolled 91 participants into the study: 31 from Summerville, 3 from Johns Island, 40 from Enterprise, 25 from Downtown, and 1 from Hollywood. Forty-nine participants completed the study, and 50 completed three-month appointments. As in the

previous quarters, the majority of the participants uploaded readings regularly, and the nurse titrated medications to control abnormal readings.

During this quarter, we continued recruitment efforts in the five sites at Franklin C. Fetter (Enterprise, Summerville, Downtown, Hollywood, and Johns Island locations). Overall, we enrolled 109 participants into the study: 31 from Summerville, 3 from Johns Island, 36 from Enterprise, 30 from Downtown, and 9 from Hollywood. Sixty-eight participants completed the study, and 53 completed three month appointments. Participants continued to upload readings, and the nurse titrated medications to control abnormal readings based on the previously approved algorithms.

As we closed out this year, we increased our overall recruitment number to 114. Sixty-nine participants completed the study, and 83 completed the three-month follow-up assessment. We continued to foster our partnerships with the company that designed and developed the telemedicine products. Given our interests and work in telehealth, we continued to collaborate with other SEVIEW Principal Investigators. We were a part of the telehealth-working group on campus and worked with other federally qualified health centers and rural medical centers across the state to establish community telemedicine health initiatives. It is noteworthy to mention that funding for the study was discontinued during this year. As a result, we could not complete the planned randomization and follow up of 200 subjects as originally planned. We had to stop enrollment and follow-up, and we did not have funds for the appropriate staff (i.e., nurse case manager, research assistants) to completed additional follow-up.

Year 4

During the final year of the study, we began analyzing the data. Sixty-five subjects completed baseline and 3 months follow-up appointments. The preliminary data are promising and demonstrate effects on multiple diabetes-related outcomes.

Based on the 3 months data, the findings suggest that technology-assisted case management is an effective intervention for low-income patients with type 2 diabetes. It had significant effects on hemoglobin A1c, diabetes knowledge, and self-monitoring of blood glucose. Based on the preliminary results, we have been funded by the state to disseminate the intervention to six rural hospitals in South Carolina as part of their patient centered medical home programs over the next 2 years.

B2d. Tele-Critical Care to Reduce Rural Health Disparities

Director: Dee Ford, MD, Associate Professor of Pulmonary and Critical Care Medicine

Goal: Improve management of sepsis by engaging rural hospitals in a telemedicine network.

Distinguishing Characteristics: Demonstrated ability to develop trusting, mutually respectful associations prerequisite to engaging rural community hospitals in a telemedicine network. Partnerships require both concurrence of hospital administration and agreement of senior community practitioners.

Program Summary:

Critical care is a specialty devoted to the evaluation and management of patients with immediately life threatening organ system failure(s). Critical care represents high stakes, high cost, acute care provided to patients suffering from a variety of potentially life-threatening conditions. Approximately 20% of Americans will die in or proximal to an intensive care unit (ICU) admission. Nationally the cost of critical care represents 1% of the gross domestic product and consumes 20% of all health care costs. For many diagnoses, mortality and morbidity is reduced through the use of specialist directed care and by receiving care at higher volume centers.¹² Several specialties within critical care (trauma surgery and neonatology) have demonstrated that patient outcomes are improved via care at higher volume centers and therefore have established tiered systems of regionalization so that these patient populations can access the needed services and specialists expeditiously.¹³⁻¹⁶ Similarly, outcomes among the most common medical diagnoses leading to critical illness - sepsis and respiratory failure requiring mechanical ventilation - are improved through care at higher volume centers and by intensivists directed management.¹⁷⁻²² Thus, professional societies have begun calling for a tiered system of regionalization for patients suffering from medical critical illnesses.²³⁻²⁴ However, important

theoretical and practical barriers exist before this can be accomplished. Barriers include a desire among hospitals and providers at lower volume hospitals to retain their patients, lack of capacity at higher volume hospitals to accept all potentially appropriate patient transfers, lack of intensivists physician staff, lack of ICU ancillary staff, and lack of agreed upon criteria for designation of different levels of care and patient selection criteria for transfer.²⁵⁻²⁶ These and other barriers are likely to be more significant in rural and medically underserved areas.²⁷ Novel, outside-the-box approaches are required. Thus, it is generally conceded that in order to globally improve outcomes for critically ill patients, a combination of inter-institutional collaboration, clinician education, quality improvement efforts, transfer of appropriate patients to higher volume hospitals, and other creative solutions such as telemedicine programs will be necessary.

The SEVIEW program in tele-critical care began in July 2010 and concluded June 2015. The project consisted of the evaluation of baseline patterns of inter-institutional transfers among critically ill adult patients in South Carolina with sepsis and respiratory failure as well as associated variation in patient outcomes. Covariates of particular interest included the effect of being from or cared for in a medically underserved community, race-associated variation, and the implications of staying in place versus referral to a larger hospital as well as the timing of inter-hospital transfers. Our goal was to improve the care of critically ill patients in partner hospitals' ICUs by improving patient safety and quality of care, implementing evidence-based best practices, offering multi-disciplinary education, and providing 24/7/365 access to MUSC's board certified and experienced intensivists for tele-consultation and patient follow-up.

Administration:

The administrative team has previous telemedicine research experience. The team consisted of the principal investigator, Dee W. Ford, MD; health services co-investigator, Kit Simpson, PhD; behavior scientist and program evaluation co-investigator, Jane Zapka, ScD; administrative program associate, Kate Taylor; and administrative program coordinator, Laura Langston. The team was further enhanced over the study period with the addition of Andrew Goodwin, MD, Lara Hiott, MD and Nandita Nadig, MD. Study personnel learned the critical, lengthy and delicate task required for an inter-institutional study and engaging a rural community hospital into a telemedicine network – developing a trusting, mutually respectable association.

Over the course of the project, the study was able to leverage the research accomplishments from the NIH funded study, Critical Care Excellence in Sepsis and Trauma (CREST) creating synergy with and supporting SEVIEW's objectives with the development of a preventive medicine, health and wellness online enduring clinical education program in the treatment of critical illness with CME/CE credit awarded via MUSC and SC Area Health Education Consortium (AHEC). Additional education opportunities were created for medical personnel throughout SC with the study team leading education programs at rural medically underserved hospitals, such as Regional Medical Center of Orangeburg, Georgetown Memorial, Waccamaw Community Hospital, Beaufort Memorial, and McLeod Regional.

Financial resources were secured for project sustainability with funding successfully gained from South Carolina Clinical & Translational Research Institute for a pilot project investigating the decision making framework among clinicians at referring hospitals to MUSC's MICU and analyzing administrative data to understand the clinical and economic implications of this transfer practice in 2012. The analysis and comparisons of the qualitative and quantitative data from this study's aims provided rich information to formulate a model of care to improve inter-hospital collaboration and outcomes for patients with sepsis and VDRF and explicate a strategic plan for regionalizing medical critical care. Further, this project collaborated with the SC Hospital Association (SCHA). The cooperative relationship with SCHA allowed MUSC's critical care multi-disciplinary team to collaborate with their colleagues at community hospitals incorporating MUSC's ongoing critical care quality and patient safety initiatives, including bidirectional data-sharing, protocol sharing, and real-time telemedicine consultation between MUSC intensivists, clinicians, and patients and allows for future intervention proposals.

The SEVIEW investigators, Drs. Ford and Simpson, served as mentors to local Academic Magnet high school student, Nate Silvestri. Under the supervision of Drs. Ford and Simpson, Nate assisted with analyzing

de-identified administrative hospital data, completed his senior year thesis project and presented to the SEVIEW team and his high school faculty advisor in February 2013.

SEVIEW investigators had enhanced collaboration and partnerships with other MUSC telemedicine programs, such as REACH Stroke, Alzheimer's, REAL Cancer, and pediatric asthma. These relationships provided a forum for sharing information and best practices in supporting remote clinical consultations and diagnostics. MUSC staff worked together showing solidarity between the various telemedicine programs.

Information learned led to the sustainability of SEVIEW tele-critical care. The program is sustainable with the financial resources of a \$1.4 million grant gained from the Duke Endowment for multi-year project for a statewide tele-critical care program. This grant's funding provides for critical care quality improvement, education, and evaluation of the overall MUSC/AICU Critical Care Telemedicine statewide program. In January 2014, a formal agreement was finalized between Advanced ICU Care and the Medical University of South Carolina. This endeavor is a public – private collaborative partnership providing a new model to improve patient care and support community hospitals statewide. This program will allow patients in community hospitals to have immediate contact with intensivists—board-certified, critical care physicians who have received specialized training in the care of ICU patients. This model will allow MUSC to deliver cost effective appropriate care to patients in local community hospitals; thereby, improving the health of South Carolina's military recruitment population. Through telemedicine these intensivist physicians can provide the same standard of care for all patients in SC providing a solution to the current intensive care dilemma and allowing patients to remain close to home. The program has targeted four hospital systems which include eight medical facilities: Regional Medical Center of Orangeburg, Orangeburg, SC; Georgetown Memorial of Georgetown, SC; Waccamaw Community of Murrells Inlet, SC; McLeod Regional of Florence, SC; McLeod Dillon of Dillon, SC; McLeod Darlington of Darlington, SC; McLeod Loris or Loris, SC; and Beaufort Memorial of Beaufort, SC. Please see the *Key Research Accomplishments* section for a list of our successes

B3. Objective B3: Establish a Community Partnerships and Outreach Program to reduce health disparities.

Program initiatives provide the foundation for integrated efforts to address chronic disease burden in populations that could provide talented recruits for military service. These initiatives also developed robust dissemination strategies to maximize adoption of program recommendations. This objective includes six initiatives in Phase I of SEVIEW.

B3a. Lean Team Initiative

Director: Janice Key, MD, Professor and Director of Adolescent Medicine

Goal: Prevent and treat childhood obesity through effective school-based partnerships at the high school level

Distinguishing Characteristics: The Lean Team initiative is based on an active program providing nutrition education and skills training for students at Burke High School, a Title 1 school with >95% African-American students. The program targets students, teachers and families. Through SEVIEW, the initiative is extending to multiple schools with an overarching goal of prevention and treatment of childhood obesity through individual, family and community change.

Program Summary:

As part of SEVIEW, our Lean Team project, "Understanding and Improving Health and Fitness Knowledge, Attitudes and Behaviors of JROTC Students in Charleston County" used a portfolio of proven approaches to achieve our overall program goal of obesity prevention. While the research portion of our project sought to achieve this through individual body composition assessments, nutrition counseling and classroom education; the non-research part of our project established a school-based wellness initiative that would increase access to healthy foods and create more opportunities for physical activity. The four main components of our project are:

- Identifying and improving nutrition and physical activity habits of JROTC students in 11 high schools in the Charleston County School District (CCSD)
- Establishing infrastructure to support improvements in school health environment through the

establishment of school wellness committees that would make policy, systems and environmental (PSE) changes

- Developing a School Wellness Checklist (SWC) tool to monitor the PSE changes
- Engaging physicians in school health efforts through the establishment of a “Doc’s Adopt” program.

Our project yielded some valuable information related to teen weight assessments, health practices, challenges and future needs. The majority of students in our study were overweight/obese, drank too much sugared-beverages, consumed few fruits and vegetables, engaged in high amounts of screen time but did little regular physical activity. Our research study was designed as a limited intervention study to learn specifically about the nutrition and physical activity habits of 800 teens enrolled in JROTC programs in 11 high schools in Charleston County. We measured BMI and % Body Fat to assess weight status and used a modified Youth Risk Behavior Surveillance System (YRBSS) survey to capture physical activity and eating behaviors. Students were individually counseled about how to improve their nutrition and physical activity habits and received at least one class on nutrition education taught by a Registered Dietitian or Dietetic intern. Resources for teachers and families were also available on our website²⁸. In addition, through separate student and instructor focus groups, we identified challenges teens face in practicing healthy behaviors and learned of ways to engage JROTC instructors in promoting health and wellness.

Our non-research, school-based work has continued beyond the scope of this project through partnerships and collaborations with private sector businesses and governmental agencies, resulting in increased capacity and sustainability of our prevention efforts. A partnership with the Boeing Company, led to the establishment of the MUSC Boeing Center for Children’s Wellness (BCCW, formerly Lean Team), which is headed by SEVIEW co-investigator, Dr. Janice Key, who serves as its Director of Community and Schools. This support has enabled us to build an effective, simple and replicable school-based health initiative model and expand this model to two additional South Carolina counties, Berkeley and Dorchester. Implementation of our initiative, has led schools to make significant policy, systemic and environmental changes that have positively impacted the health environment of 113 schools and reaching nearly 80,000 students in three counties. In addition, schools that were adopted by physicians as part of the “Docs’ Adopt” component of our model made greater changes than schools without an adopting physician. The success of this initiative has generated interest from several communities that will lead to statewide replication of our model and further impact the health of South Carolinians.

Key Research Findings

Through this SEVIEW supported project, we identified a number of challenges to healthier eating and regular physical activity that teens face in a school environment. In addition, we identified strategies that could be employed in a school setting to improve weight status, nutrition and exercise habits. Our portfolio approach included: individual assessment of Body Mass Index (BMI) and percent Body Fat (%BF), diet and exercise counseling, classroom instruction, focus group sessions, structured exit interviews and surveys of instructors and evaluation of the JROTC curriculum materials used in the various schools as well as the nature and frequency of instructor training. Detailed results are included in **Appendices G-H**.

We collected baseline data on 806 participants (43% of cohort); 788 students and 18 JROTC instructors from 11 high schools and second assessment data on 489 students and 17 instructors from four of the high schools (1 rural, 2 suburban and 1 urban). The incidence of overweight/obese was high in both the students (44%) and instructors (67%) enrolled in our study. Many of the JROTC students had unhealthy weights and lifestyles and did not become more fit as they advanced through high school. Forty-four percent of students were classified as Overweight/Obese based on BMI and this significantly varied by gender (60% of girls were Overweight/Obese) and ethnicity (76% H, 59% AA, 45% W) but not by grade. Contrary to what we hypothesized, there was no significant difference in mean BMI between 9th and 12th grade JROTC students, suggesting, that school environment plays a role in student health. In addition, we found BMI to be a less accurate measure of Overfatness in those students who fell in the mid to upper range of BMI (75th-90th percentile) therefore, additional assessment methods may be warranted to accurately classify weight status in

teens. In general, the majority of students failed to meet recommended guidelines for fruit and vegetable intake (93%) and daily physical activity (64%); exceeded screen time limits (83%) and consumed too many sugared beverages (96%). Students indicated in focus group sessions that they desired additional nutrition curriculum, gender specific physical activities, weight status assessment and counseling by a qualified health professional such as a school nurse or dietitian and for schools to offer healthier food choices. Of the 18 JROTC instructors who participated; 67% of them were overweight/obese based on BMI measurements, 94% were male, 6% female (1 black female). Of the males, 65% were white, 29% black, and 6% Hispanic. The mean age was 53.3 years (± 5.3). We learned through focus groups with the instructors, that they although many of them struggled with their own health issues they wanted to encourage students to lead healthier lifestyles. They indicated a desire for additional training in nutrition and like students, wished there were healthier food choices in schools; although, we noted during site visits, that JROTC often sold unhealthy foods as fundraisers to support their program. An overview of key focus group findings were:

- Students
 - Joined JROTC for wide variety of reasons
 - Most enjoy the nutrition, physical activity curriculum but only get it 1X in 4 years
 - Want nutrition education activities they can relate to that are meaningful/personal
 - Want nutrition counseling/fitness evaluation by someone other than instructor
 - Expressed need for gender-specific Physical Training and Physical Activity
 - Expressed need for better food choices in schools
 - Indicated healthy food wasn't always available and was too expensive
- Instructors
 - Committed to promoting healthy behaviors to students
 - Most strive to "lead by example"
 - Would like additional training in Nutrition, Health Education and Physical Education
 - Some service branches update textbooks or send supplemental curriculum but offer little/no actual training
 - Inquired if they could attend PE, Health Education professional development (PD) days at their school
 - Expressed need for better food choices at school

In addition, as part of this project, each school received a digital scale, stadiometer and hand-held bioelectrical impedance analyzer to enable them to conduct future weight status assessments. We also conducted exit interviews with all of the JROTC instructors and collected written surveys from 89% (16/18) of them. During the site visits and interviews, we shared de-identified group summary project results, obtained completed surveys and trained instructors and a school wellness committee lead on the proper collection of BMI measurements and its associated risks. Through the exit survey, we determined that overall satisfaction with the project was high and instructors found the sharing of results with them to be informative and worthwhile. They also liked the fact that our project didn't single out obese students but instead was inclusive and had the goal of improved wellness for all students. Similar to the findings in the student focus groups, the instructors thought the one-on-one, individual assessments and counseling were a desirable and effective way to motivate students to lead healthier lifestyles. Instructors indicated that as a result of what they learned during this program, they were more likely to encourage students to make changes in their eating and exercise habits, lead by example and incorporate more nutrition education into the classroom. Additionally, an unexpected outcome of this project learning that some female athletes lacked adequate supportive sports bras that hindered their ability to engage in regular, vigorous physical activity. This knowledge led to a partnership between MUSC BCCW and a local business that started a sustainable bra donation campaign, "Support the Girls," and established a goal of fitting all female JROTC cadets with sports bras. Schools and the community quickly adopted this simple idea and 159 girls in three of the high schools were outfitted with high quality sports bras this school year. The donation campaign is ongoing.

To date we have published two abstracts,

- “Doctor, It’s All muscle!” a comparison of body fat versus BMI in assessment of obesity in teens. JD. Key, et al., at the Pediatric Academic Society (May 2013).
- “Evaluation of weight status, % body fat and lifestyle behaviors in JROTC students.” JD Key, et al., The Obesity Society (September 2012).

Evaluation of Program Activities, Outcomes and Goals and Recommendations:

Our five main activities were implemented as planned with little exception and all major goals were met or exceeded. Greater than expected participation (sample size), project timeline and school constraints led us to change our originally proposed protocol from collecting quarterly individual assessments to doing baseline and follow-up; we did not monitor blood pressure. **Table 10** reflects key activities, outcomes, goals, achievements and unexpected outcomes resulting from the project.

Table 10: Project Evaluation of Lean Team “Understanding and Improving Health and Fitness Knowledge, Attitudes and Behaviors of JROTC Students in Charleston County”

Activity	Outcome	Goal	Achievements	Unexpected Outcomes
1. Individual assessment and counseling of JROTC students (n=1800) about nutrition and exercise every 3 months (weight, height, body mass index (BMI), % body fat, blood pressure (BP) and a survey of eating and exercise habits)	Baseline and quarterly repeat assessment of 50% of study participants	Improved JROTC fitness	No significant difference in BMI between Survey 1 and 2; We did not monitor BP	Large sample size, project and school time constraints allowed for baseline and second survey of 60% of study participants
2. Social network support of healthy behavior changes among teachers, students, and family members	Increase followers of Facebook page and twitter by 100%	Support healthier behavior changes	Facebook page and twitter accounts were established	Did not track identifiable likes and followers
3. Classroom education about nutrition and fitness, with close coordination to meet the curricular objectives for JROTC through enhancement of existing JROTC health and nutrition curricula	Develop 4 PowerPoint’s on nutrition and fitness and test instructor knowledge and use	Improved effectiveness of JROTC classroom education about health, fitness & nutrition	Developed 4 PowerPoint modules but did not survey instructor knowledge or use.	Exit interviews and surveys of instructors suggested they plan to incorporate more nutrition and fitness education in classroom.
4. School cultural change through participation on the CCSD Coordinated School Health Advisory Council and with the establishment of individual school wellness councils	Establish wellness committees in >80% CCSD schools, develop a wellness checklist tool to track effectiveness of school health initiative, Train physicians to adopt schools and serve on wellness committees	Healthier school policies and environment in 80% of CCSD schools	School Wellness Checklist (SWC) tool developed and piloted in CCSD schools; >85% established effective wellness committees leading to major PSE changes in nutrition and physical activity; > 50% were adopted by physicians (Doc’s Adopt)	Our SWC was adopted successfully for 4 yrs. in CCSD, replicated and expanded to 2 other counties (Berkeley, Dorchester) who also successfully adopted the model in 54% and 100% of schools, respectively

5. Web-based resources for teachers about health and physical activities (for example “Deskercise” -classroom exercise routines that students can do while seated in their desks). See website: http://www.musc.edu/leanteam	Created web-based resources on nutrition and physical activity (PA) for use by teachers	Improved classroom health, education and physical activity	Our healthy cooking, yoga and Deskercise videos were the highest viewed resources on our website.	71% of schools in all 3 counties increased daily PA; 75% promoted water drinking; 32% instituted non-food reward policies, and 89% started gardens
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Our participation in the SEVIEW project helped us to obtain additional funding to continue refinement, replication and expansion of our school-based wellness initiative in South Carolina. Future projects should address improvement of school health environment, instructor training; gender specific fitness needs and weight status assessment methods by gender and race.

SEVIEW Collaborations and Synergy:

The formation of SEVIEW, fostered an atmosphere of collaboration at MUSC and with the community which has led to a better understanding of the health needs of South Carolinians and the creation of methods to better deal with those needs. Throughout this period, several new partnerships and collaborative efforts within SEVIEW were forged, leading to streamlined, comprehensive efforts in the same target populations and to new or continued funding streams, adding to our collective impact on the residents of South Carolina and generating effective models that can be replicated in other communities. Lean Team SEVIEW synergies include the following:

- Dr. Jimmy McElligott (Telemedicine)
 - Advice and technical assistance on data/project outcomes
 - school-subcommittee member
- Dr. Carolyn Jenkins- (South Carolina Clinical and Translational Institute-SCTR):
 - Community Engaged Scholars Grant/Course
 - Partnering with CCSD to collect and catalogue BMI data into a central data base
 - Obesity Summits
 - October 2012- Scientific Retreat
 - December 2012- Community Forum-Conquering Tri-County Obesity
 - Collaborative expansion of BCCW Wellness Checklist/Initiative to Bamberg County School Districts 1 and 2
- Dr. Melissa Henshaw and Janet Carter: (Heart Health)
 - Boeing Center for Children’s Wellness
 - Formed 3 years ago to include prevention and treatment of obesity in clinical as well as community and schools settings
 - Website development and promotion of health & wellness with links to each others initiatives/events/resources
 - Numerous Health Fairs in both community and schools
 - St. Stephens Elementary in Berkeley County (2012). Impacting > 200 families
 - CCSD First Day Festival (2012 & 2013). Impacting > 2000 families
 - CRBR Expo (2011-2014)- developed nutrition games to identify best fast food and sugared beverages. Impacting > 1000 participants
 - Children’s Museum of the Low Country “Fam Jam” (2011-2013). Impacting > 500 families
 - Boeing Family Day (2013 & 2014). Impacting > 8000 employees and family members
 - Bridge Walks
 - Conducting and Promotion of our Bridge Walks (2010-2014). Impacting > 500 participants each year

- McFadden Family- HH participants who learned of our walks via HH and brought their son who is in treatment as well as five other family members. While on the bridge they connected with Lean Team and a young AA boy who had lost 60 pounds, graduated high school and became eligible to enroll in Merchant Marines (we provided letters of recommendation). Example of mentoring, encouragement and life change as result.
- Dr. Scotty Buff: (Jr. Doctors of Health)
 - Schools subcommittee met bi-annually to discuss project experiences, evaluation, goals and methods and areas of overlap and synergy.
 - Overlap/Reinforcement of Health and Wellness in Burke High School JROTC students
 - Promoteed and linked their JDOH to Boeing Center School Wellness Checklist by offering points to schools for nutrition/physical activities with families
- Dr. Marvella Ford and Dr. Debbie Bryant: (Compass Healthy Communities Project-Hollings Cancer Center)
 - Linked with Eat Smart Move More to provide nutrition and physical activity information to 100 participants at community conference titled “ Laughter, Living and Lifestyles”.
- SEVIEW Administrative CORE (SEVAC)
 - Provide photos/stories for the Website
 - Advice and guidance to co-investigators and staff
 - Organized meeting with Representative Clyburn’s staff in DC and with Pentagon officials
- Dr. Pat O’Neil and Josh Brown: (MUSC Weight Management Center-
 - Linked LEAN program with schools and distributed materials to school wellness contacts

Non-Research Activities:

During the SEVIEW project period (2010-2014) we expanded our efforts to improve the health of children, families and teachers in schools and communities to include two additional school districts in Berkeley and Dorchester Counties both of which have higher than state and national averages of obesity rates. We used our partnerships with South Carolina DHEC Lowcountry (formerly Region 7) and Trident United Way to expand our wellness initiative to Berkeley County School District (BCSD) and Dorchester 2 County School District (D2SD). We have experienced rapid adoption of our BCCW SWC model in these counties with increased participation each year (82% CCSD, 54% BCSD, 100% D2SD). Efforts led to policy, systems and environmental changes that are positively affecting the health of the school-based community. Highlights include:

- Training school and community partners on BMI measurement, and provision of age-adjusted BMI charts to improve the quality of BMI data collected by the schools (2010-2014)- impacting 84 schools, 40,000 students
- Implemented a MUSC/SCTR Community Engaged Scholars mini-grant with CCSD (2013-2014) to evaluate our School Wellness Checklist (SWC) initiative and assist in the collection of and storage of BMI school data into a single database housed at CCSD.
- Maintaining a website, Facebook page and Twitter accounts (2011-2014) that provide resources for teachers, physicians, adults and children that encourage continued commitment to healthy behaviors.
- Established and continuing a Blog (2013-2014) for tri-county area schools and Doc’s Adopt physicians to facilitate communication and sharing of nutrition, physical activity, PSE and school health improvements. Impacting > 113 schools in 3 counties
- Partnership resulted in a three-year broadcasting campaign (2012-2014) involving five local radio stations to improve exercise and eating habits, of local residents. Impacting > 300,000 area residents
- Established new partnership through Eat Smart Move More Charleston Tri-County with WCSC-Channel 5 to promote healthy eating and active living. Impacting > 300,000 area residents
- Developed, implemented, and replicated BCCW School Health Initiative: SWC tool & Doc’s Adopt (2010-2014). (82%) of CCSD schools, (54%) of BCSD schools and (100%) of D2SC schools to

implement policy and environmental changes at district and school level. Impacting > 80,000 students, staff & families

- Development, implementation, replication, expansion and continuing of our “Doc’s Adopt” program (2011-2014) that trains and pairs physicians with CCSD schools and expanding to D2SD in August 2013- impacting 75 schools
- Continuing a School Lunch Improvement Initiative by working with CCSD, BCSD and D2SD to develop healthier Ala-carte foods and implementation of USDA Smart Snack guidelines (2012-2014). Impacting 113 schools in three counties
- Developed and distributed monthly health newsletter highlighting bridge walk activities and encouraging healthy eating and active living. Impacting 500 area residents each year
- Implemented CDC School Health Index Training in collaboration with SC Department of Education (2013 & 2014). Impacting 30 schools in 3 counties
- Continuing Lean Team Bridge Walks (2007-2014). Impacting > 500 participants each year, logging almost 50,000 miles
- Developed, implemented and continuing a community-based donation campaign “Support the Girls” (2013-2014) to eventually outfit all JROTC girls in CCSD schools with high quality, properly fitted sports bras. Impacting to date 159 girls in three high schools
- Implemented CRBR Annual mini-grants for promotion of regular physical activity (2010-2014). Continued an active living initiative for teachers by partnering with Coastal Community Foundation to support training and participation of school employees in CCSD, BCSD, D2SD as walkers/runners in the annual 10K Cooper River Bridge Run-
 - Grants for training and entry in annual CRBR runs- impacting > 60 participants per year
 - Encouraging and assisting schools to apply for CRBR grants. Impacting > 18 schools, 1800 students and teachers from three school districts

Individual Assessment: BMI collection in schools:

South Carolina Student Health and Fitness Act of 2005 (updated in 2013) recommends that schools measure BMI’s in fifth grade, eighth grade and once in high school for Fitness Gram reports.²⁹ These measurements are conducted by physical education teachers and school nurses. We are continuing our effort to assist schools with BMI collection since learning two years ago that BMI measurements were often inaccurate because schools lacked quality, reliable equipment; that students were often not asked to remove shoes or extra layers of clothing and contents of their pockets prior to height and weight measurements; that some schools were not using age-adjusted BMI charts in their measurement collection and that no single data base or collection protocol existed in the majority of school districts and/or within the SC department of education. As part of our SEVIEW Lean Team project, we distributed high quality BMI stations (digital scale, stadiometer and body fat analyzer) to 11 CCSD high schools to facilitate future BMI collections in that district. In addition, we hold district wide BMI trainings detailing the proper techniques and risks associated with assessment of weight status in children. We also regularly update our website²⁸ with relevant resources for our school partners. We applied for and received a mini-grant through MUSC’s Community Engaged Scholars program with CCSD to capture BMI data in a single database housed at the school district—a potential model for statewide collection.

Website/ Social Networking:

Our website²⁸ was developed in 2007, maintained and updated with support from the SEVIEW project and continues to be a widely used resource for teachers, physicians and families.

School Health Initiative:

During the SEVIEW project period we applied for and received additional funding from the Boeing Company to continue the non-research school-based wellness initiative. This partnership has increased the model’s capacity and sustainability, which has been rapidly adopted by three SC counties and garnered greater than expected interest, from 11 more counties in the state. We do not currently have sufficient funding to

implement our SWC and Doc's Adopt model in all of these communities but are seeking funding for replication and expansion.

- Partnership with the Boeing Company continues under the MUSC Boeing Center for Children's Wellness (BCCW-formerly named: Boeing Center for the Promotion of Healthy Lifestyles in Children and Families; Lean Team) and they have committed two more years of funding (through December 2016) for a limited expansion, with annual approvals required.
- Continue to revise our BCCW SWC tool based on nutrition and physical activity best practice models and are partnering with Alliance for a Healthier Generation (AHG), South Carolina Department of Education (SCDE) and the Healthy South Carolina Initiative (HSCI) to include items on the checklist that will help schools achieve national recognition for their efforts.
- Established and supported Wellness Achievement Celebrations (WAC) in the three counties participating in the school health initiative. Qualifying schools present lessons learned and success stories and receive wellness achievement awards (\$1000 each). 113 schools received awards this year.
- Continue to train and recruit physicians for "Docs-Adopt" program (established in November 2010) to serve as resource for school wellness councils. Program led to adoption of 95% of CCSD and 68% of D2SD and 5% of BCSD schools. Both CCSD and D2SD have formalized county medical societies; suggesting that a strong network of physicians is needed for successful expansion of the program into other communities. The schools in those three counties that were adopted by physicians made more PSE changes and earned higher points on our SWC checklist.

Community Outreach:

- **Bridge Walks:** In 2007, prior to the SEVIEW project, we began a community outreach effort to encourage residents to lead healthier, more active lives. We offered a free, public, bridge walk across the Arthur Ravenel, Jr. Bridge from Charleston, SC into Mt. Pleasant, SC. Participants could walk 1-5 miles, log their miles, receive a t-shirt and newsletter. Support from SEVIEW and Boeing Company allowed us to continue these walks on a monthly basis. More than 500 participants have logged nearly 50,000 miles.
- **Media campaign:** An effort to reach deeper into the community with obesity prevention and treatment strategies has led to continued partnerships with Cumulus Broadcasting, made up of five radio stations reaching over 300,000 listeners in the tri-county area, and WCSC-TV which reaches more than 500,000 viewers in the tri-county area. The partnerships came about through Eat Smart Move More Charleston Tri-County (ESMMCTC), a local chapter of our state organization. Both companies are committed to encouraging area residents to improve their health. These partnerships provide SEVIEW members and other community partners an opportunity to contribute their expertise by appearing as guests and acting as resources to the stations. Listeners and viewers are encouraged to increase physical activity and eat healthier. Information discussed during the broadcasts is added to the ESMM CTC website³⁰ available to the public.

Community Synergies/Partnerships:

- Capacity building
 - JROTC instructors and students in Charleston County School District
 - Shared JROTC study results, provided training and equipment for BMI measurements during 2-hour site visits with 11 high schools.
 - Capacitated school to collect/monitor/evaluate BMI/Body Fat data by providing training, a stadiometer, digital scale and hand-held body fat analyzer to the school.
 - Increased awareness of overall district and school wide wellness initiative by connecting JROTC instructors and students with their school wellness leaders.
- Continued School Wellness Initiative expansion into other SC counties
 - 84 Charleston County School District schools (2010-14)

- 41 Berkeley County School District schools (2012-14)
- 22 Dorchester 2 County School District Schools (2012-14)
- 11 other counties submitted RFP's to BCCW for expansion funds (2014)
- Provided technical assistance to LiveWell Greenville in Greenville County (2012-13)
- Co-lead effort to establish a Healthy Schools Network across the state as a forum/entity to share best practices, lessons learned and compile resources (Initial Planning Meeting held May 30, 2013-attended by 23 people from 20 organizations working on implementation of HEAL strategies/policies in schools such as MUSC Boeing Center for Children's Wellness, Eat Smart Move More SC, SC School Nutrition Association, SC DHEC central office and Lowcountry, Southeastern United Dairy Industry Association, Alliance for a Healthier Generation, LiveWell Greenville, and Piedmont Health Foundation.
- Sustainability Plan:
 - Engage community partners in the school wellness efforts
 - Established communication/outreach to local community businesses to provide a forum (Wellness Achievement Celebration) for businesses to engage and be recognized for improving school health environment
 - Seek new funding or in-kind support from private sector and governmental agencies
 - Evaluate effectiveness of model
 - Publish findings
 - Apply for all grants relative to scope of work: improve school health environment
 - Consider developing a formal fundraising strategy
- Advocacy
 - Continue to advocate for strategies that will impact the prevalence of obesity
 - Unified! A Voice Against Obesity: February 21, 2013 at SC DHEC
(<http://www.scdhec.gov/scobesity/>)
 - Increased awareness and engaged leaders and provided testimony to support proposed SC-S 599 Healthy Student Act of 2013
(http://www.yaleruddcenter.org/resources/upload/docs/what/policy/legislation/SC_SB_599_Healthy_Students_Act_of_2013_Shealy_4_11_13.pdf)
 - Update Pentagon staff and Congressman Clyburn's office to share importance of our JROTC study results and to encourage support of school wellness efforts
 - Joint Legislative Committee on Children's Health- testify as needed (2012 & 2014)
 - Service on SC Obesity Council charged with development of new 5 year state obesity strategic plan

B3b. Community Engaged Scholars Initiative (CES)

Director: Carolyn Jenkins, DrPH, Professor for the College of Nursing

Goal: Increase the capacity of academic-community partnerships capable of conducting research in non-traditional settings with mutual ownership of the processes and products.

Distinguishing Characteristics: CES provides training, pilot funds and mentorship for teams consisting of an MUSC researcher and community partner(s) who have collaborative interests in community-based participatory research (CBPR) to eliminate health disparities. CES will help bridge the gap between clinical practice and community health needs.

Program Summary:

The Community Engaged Scholars Program (CES-P) is an education and training initiative of the South Carolina Clinical & Translational Research Center for Community Health Partnerships (SCTR/CCHP) at the Medical University of South Carolina (MUSC). This program provides training, pilot funds, and mentorship for research teams, consisting of academic and community partners who have interests in community-based participatory research (CBPR). Please see **Appendix M** for a list of CES teams.

The goal of this program is to increase the capacity of community-academic partnerships to conduct research with mutual ownership of the processes and products, and ultimately, improve the health of our communities in South Carolina and beyond. After successfully completing the program, participants are expected to meet the following competencies:

- Discuss the concepts and components of CBPR and other methods for community-engaged research
- Apply CBPR principles in the conduct of research
- Incorporate CBPR principles and approaches in grant proposals
- Demonstrate CBPR efforts in a career portfolio
- Communicate with audiences in both community and academic settings about CBPR principles and components
- Implement a pilot CBPR initiative with high potential for continued research findings

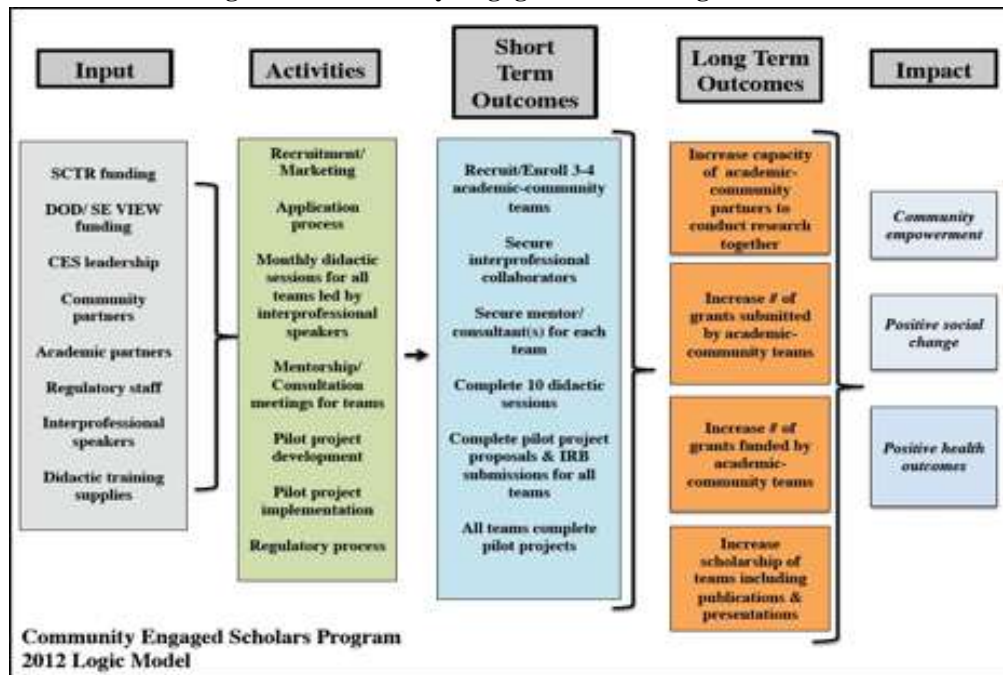
Each CES-P team must consist of at least one community partner and an academic partner from the Medical University of South Carolina (MUSC), one or more university/academic SCTR partner institutions (Claflin College, Clemson University, South Carolina State University, University of South Carolina), or university/academic institutions participating in a SCTR-led research initiative. A community partner is defined as an individual(s) who maintains a primary affiliation, whether employed or volunteer, with a community organization. For the purpose of this program, community organization is defined as an organization that has:

- Documented interest in improving the health of the relevant community (e.g., a mission statement)
- A history of serving the health needs and interests of the relevant community. These organizations may include, but are not limited to public schools, community-based organizations, faith-based organizations, and/or advocacy groups. An academic partner is defined as an individual(s) with a faculty appointment in a research area at MUSC.

These organizations include public schools, community-based organizations, faith-based organizations, and/or advocacy groups. An academic partner is an individual(s) with a faculty of postdoctoral appointment on a research track at MUSC or other state-wide university/academic institution. The CES-P logic model is shown in **Fig. 8**. The following lists the program schedule for the didactic training sessions:

- Didactic Training (Months 0-6)
The didactic portion of the CES Program addresses definitions, principles, theories and methods of CBPR, grantsmanship, building and sustaining partnerships, evaluation, and career development. Interprofessional faculty and community members will conduct the sessions. Optional online modules will also be available to help build research capacity.
- Mentorship/Consultation (Months 0-18)
Each team meets with a community or academic consultant to help guide the development, implementation, and evaluation of a pilot CBPR project. SCTR/CCHP staff assists each team in the identification of a consultant in the team's field of choice. Consultants have expertise and success with CBPR. Teams are expected to meet with their consultant on a monthly basis.
- Pilot Funds (Months 6-18)
After the submission, review, and acceptance of a quality pilot grant proposal, as well as institutional review board (IRB) approval, each team receives funds to implement a community-based research project. Teams develop the grant proposals during the first three months of the CES Program, and all pilot grants must complete a final project report. The pilot grants are a mechanism to inform future grants to be funded by state, federal, and other sponsors by the partnership team.

Figure 8: Community Engaged Scholars Logic Model



Program Evaluation

To evaluate CES-P, a modified RE-AIM (Reach, Effectiveness, Adoption, Implementation, and Maintenance) framework has been used, which maximizes the potential for broader dissemination of the program. For the fourth cohort, the evaluation questions and evaluation timeline have been restructured to fit within the RE-AIM framework. Additionally, the design of an in depth evaluation of CES to determine overall success for all cohorts is currently underway. The current design includes:

- Reach

To evaluate reach of the CES-P, we monitor: number/types of participants that: a) inquire about the program (via phone, email, and/or information sessions) and their representative organizations; b) apply for the program and their representative organizations; c) are selected, including organizations, areas of health interest, experience in CBPR, and previous history/experience with CBPR partnerships. Beginning with Cohort 4, we plan on also determining the populations that have been served by CES-P Teams, as well as the geographic areas covered.

- Effectiveness

Effectiveness is reflected at two levels: the dyad level and the program level. In order to assess the effectiveness of each session at the program level, participants are asked to complete a standardized reporting form, developed using the Research Electronic Data Capture (REDCap) database and survey system, after each session to assess their thoughts on the session content, expertise of speakers, usefulness etc. Participants are also asked to complete a mid-term evaluation, and an overall evaluation of the program to assess knowledge, attitudes, behaviors, usefulness, satisfaction etc. Research electronic data capture (REDCap) (ref.), a web-based database system, was used to develop these evaluation tools. We are currently in the process of expanding the evaluation of effectiveness to include an evaluation of the dyad's level of impact on policies, health, processes, the environment, health outcomes, and systems. We also plan on calculating the return on investment for the CES-P. We plan to continue using the existing tracking system of standardized reporting forms and logs and plan to continue our longitudinal follow-up of teams. We will assess the dyad's progress with their partnerships by documenting products such as grant submissions, grant funding, and dissemination activities (local, regional, state, national and international).

- Adoption

In the case of the CES-P, “adoption” is reflected in measures of impact effectiveness at the dyad level. We use Green’s Guidelines for Participatory Research⁴⁸ to review the CES teams pilot proposals.

- **Implementation**

Delivery of the CES-P components is evaluated using a treatment fidelity strategies checklist, including videoconferencing delivery, attendance, online module access, use of mentors, apprenticeship activities, use of SUCCESS Center, SCTR vouchers, and applications for SCTR pilot funds. During the coming months, we will conduct interviews with consulting faculty, partners, and participants on successes, challenges, barriers to the implementation, and recommendations for sustainability.

- **Maintenance**

Maintenance is reflected at two levels: the dyad level and at the program level. We will monitor if adherence with the program components occurs over time, and if the partners maintain their collaborative working relationship. We will also investigate if either partner or dyad undertakes additional CBPR initiatives post-training, the sustainability of the partnerships/products, evidence of policy change, and social and health impact.

Additional Education and Training Opportunities

The following educational and training opportunities were offered to CES teams, academic faculty, and wider community from July 2012 to May 2013:

- “What Role Injury Prevention Plays in Transportation”. Phyllis Agran, MD, MPH. APHA Health and Equity in Transportation Series webinar, part 2 of 3. July 11, 2012.
- “What Health Impact Assessments can do for Health Inequities”. Alyssa Auvinen, BS; Karen Nikolai, MCP, MPH; Crystal Myslajek, MPP. APHA Health and Equity in Transportation Series webinar, part 3 of 3. August 22, 2012.
- Consequences of the obesity epidemic. Part 1 of Weight of the Nation four-part video series on obesity, presented by HBO and Institute of Medicine. Follow-up discussion led by Cathy Melvin, PhD, MPH. September 10, 2012.
- “Bridging Research and Reality: Practice-Based Evidence and Evidence-Based Practice”. Michael Potter, MD; Larry Green, Dr. PH, ScD (Hon). September 11, 2012.
- “Choices for Addressing Obesity”. Part 2 of Weight of the Nation four-part video series on obesity, presented by HBO and Institute of Medicine. Follow-up discussion led by Patrick O’Neill, PhD. September 17, 2012.
- “Challenges to Preventing Obesity”. Part 3 of Weight of the Nation four-part video series on obesity, presented by HBO and Institute of Medicine. Follow-up discussion led by Gayenell Magwood, PhD, RN. September 24, 2012.
- “Children in Crisis: Hear their Voices”. Part 4 of Weight of the Nation four-part video series on obesity, presented by HBO and Institute of Medicine. Follow-up discussion led by Janice D. Key, MD.
- “Implementing Evidence-Based Interventions within Healthcare Systems”. Lisa Troyer, BA; Michael Celestin, MA, CHES, TTS; Angela McFall, MS. NIH Cancer Institute Research to Reality Series. October 9, 2012.
- “Taking Action to Achieve Health Equity: Beyond the Affordable Care Act”. Bryan Smedley, PhD. 34th Annual Minority Health Conference 15th Annual William T. Small, Jr. Keynote Lecture, University of North Carolina, Chapel Hill. February 22, 2013.
- “How Engaged Are We? Measuring Community Engagement and Partnership”. Nina Wallerstein, Dr. PH; Bonnie Duran, Dr. PH. NIH Cancer Institute Research to Reality Series. May 20, 2013.

Online modules are available through the CE (Community Engagement) 360° program. The modules

that are currently available are:

- Introductory Level
 - Module 101: An Introduction to Community-Engaged Research
 - Module 102: An Introduction to Community-Based Participatory Research
 - Module 104: Are We Ready? Academic-Community Partnerships in Preparation for CBPR
 - Module 109: Literature Reviews: How to do a Literature Review
 - Module 111: Community Assessments and Problem Identification
- Intermediate Level
 - Module 203: An Introduction to Focus Groups and Key Informant Interview
 - Module 205: Planning Focus Groups
 - Module 206: Conducting Focus Groups
 - Module 207: Conducting Key Informant Interviews

Dissemination of CES-P

Conference Presentations and Publications: A brief overview and recruitment of participants for the 2013 Scholars was presented at the Obesity Summit. A manuscript titled Training Partnership Dyads for Community-Based Participatory Research: Strategies and Lessons Learned From the Community Engaged Scholars Program appeared in the July 2013 edition of Health Promotion Practice Volume 14 Issue 4.

B3c. Mobile Outreach Van, Educational and Navigation Health Services for Underserved Populations (MOVENUP)

Director: Marvella E. Ford, PhD, Associate Professor, Hollings Cancer Center

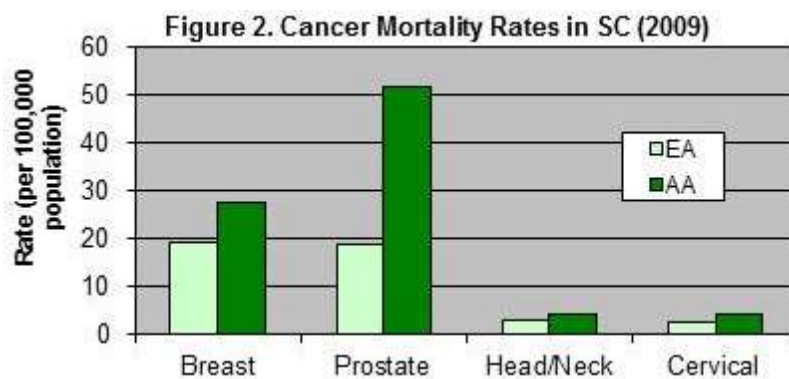
Goal: Reduce disparities in cancer services access, morbidity and mortality in the I-95 Corridor with a focus on three common cancers occurring to a disparate degree in the SEVIEW regions: breast, cervical and prostate.

Distinguishing Characteristics: An I-95 Corridor Health Advisory Committee provides advice and program review, identifies community agencies/health centers to be partners for MOVENUP, and identifies service locations for the mobile unit. Students from three HBCUs participate in cancer education programs and cancer disparities research training.

Program Summary:

Cancer is a major public health problem in South Carolina. Current estimates are that 1 in 2 men and 1 in 3 women in South Carolina will develop cancer at some point in their lives. Two of the most common types of cancer death in South Carolina are breast and prostate cancers. **Figure 9** illustrates the cancer mortality rates in South Carolina for 2009.

Figure 9. Cancer (2009)



Mortality Rates in SC

Breast cancer is the second most common cause of cancer death in women in the US and SC. AA women have disproportionately higher breast cancer mortality rates than that of EA women.³¹ These mortality rates in SC are 27.5 for AAs vs. 19.1 for EAs.³² Furthermore, among women younger than 40 years, the breast cancer incidence rate is 16.8 for AAs vs. 15.1 for EAs.³³ Nationally, the highest AA-EA incidence rate ratio (IRR) is seen among women younger than 30 years (IRR = 1.52, 95% confidence interval = 1.34 to 1.73).³³

Prostate cancer is the second most common cause of cancer death among men in the US and SC. AA men in SC are nearly three times more likely to die from prostate cancer compared to EAs.³² AA men have a 1.4 times higher risk than EA men of being diagnosed with prostate cancer.³⁴

In South Carolina's I-95 Corridor Counties, cancer mortality rates are even higher than in the rest of the state. Our programs focused on the geographic area bounded by the 200-mile stretch of the I-95 highway that crosses South Carolina.

The chronic diseases we addressed are three common cancers occurring to a disparate degree among the residents of the I-95 Corridor counties: breast, cervical, and prostate cancer. The long-range goal of the mobile outreach, educational, and navigation health services for underserved populations (MOVENUP Program) is to reduce disparities in cancer services access, morbidity and mortality.

Rationale for Geographic Area Selected: The I-95 Corridor encompasses some of the most socially and economically disadvantaged counties in the nation. Residents experience persistently high levels of poverty and high rates of premature mortality due to undetected, untreated, and under treated chronic health conditions.

Rationale for Chronic Diseases Targeted: The MOVENUP Program demonstrates a creative and effective new model of health outreach and service delivery in rural communities. Through the MOVENUP Program, the health needs of a wide range of rural population groups including, but not limited to, low-income populations, minority populations, and populations experiencing chronic health conditions will be met. Disparities in the incidence and treatment of cancer have a significant impact on economic growth and quality of life in South Carolina's rural and minority communities as well as their military readiness.

Statement of Work:

- **Task 1.** Provide mobile health unit services and patient navigation services
- **Task 2.** Provide cancer education and education related to nutrition/physical activity to the identified I-95 Corridor counties
- **Task 3.** Develop a cancer research training program with students from the following Historically Black Colleges and Universities (HBCUs): Claflin College, South Carolina State University, and Voorhees College

B3d. Health Empowerment Zone

Director: Deborah Williamson, DHA, CNM, Associate Dean for Practice; Assistant Professor, College of Nursing

Goal: Develop and validate an inclusive academic/community partnership in North Charleston, SC addressing neighborhood-level characteristics related to availability of healthy food and physical environments.

Distinguishing Characteristics: Combines high tech healthcare and ‘high touch’ community engagement, education and empowerment; has dual focus on rapidly growing Hispanic and historically underserved African American populations; creates 360° partnership embracing health practice, contractual arrangements, health policy task forces and research.

Program Summary:

The Health Empowerment Zone (HEZ) promotes individual, systems, and policy changes to create and enable a culture of healthy eating and active living thereby reducing childhood obesity and preventing obesity-related conditions. The purpose of the project is to engage the North Charleston community in creating a safe access to a healthy lifestyle that includes healthy eating, active living and a clean environment where people live, learn, work and play. Community members and top-level leaders in all community sectors will collaborate to implement policy and environmental strategies to create sustainable, healthy communities.

Goal 1: To develop an inclusive and effective academic/community partnership in North Charleston to address neighborhood level characteristics related to the availability of healthy food to reduce obesity.

Objective 1: To identify key partners reflecting the diversity, expertise, and community involvement required promoting healthy eating and active living in North Charleston.

- Offered workshops to provide information on healthy eating and active living
- Healthy North Charleston, a community coalition, was established in partnership with HEZ to address healthy eating and active living. For sustainability after the end of grant funds, the Healthy North Charleston Coalition merged with Eat Smart, Move More (ESMM) in 2013. ESMM is a community coalition supported by South Carolina Department of Health and Environmental Control (DHEC). Although ESMM includes the tri-county area, the Healthy North Charleston Coalition felt that enlarging the target area would create more synergy in program development, expand grant opportunities, and support more efficient use of resources. The website for ESMM, <http://eatsmartmovemore.org/charleston-tri-county/who-we-are/> describes the coalition and its priorities.

Objective 2: In collaboration with the Achieve grant team, a complete needs assessment of systems, environments, and policies that affect healthy eating and active living to create a community action plan using the CDC CHANGE Tool for North Charleston.

- The CDC Change Tool was used to monitor changes in the community in the area of policy, systems, and environmental change. A two-year review was completed in August 2012. The assessment included nutrition, physical activity, tobacco cessation, and chronic disease management.
- In addition to the Change Tool, a windshield survey, a convenience store audit for healthy foods, and a neighborhood checklist were completed to inform findings. Significant findings after two years included more policies addressing healthy food options at public events and community organizations such as churches and schools. The establishment of wellness committees in schools, and a wellness checklist developed by Charleston County School District for implementation in the schools were other examples of policy and environmental changes. State physical activity minutes for students enrolled in public schools were already established at the beginning of the grant, but compliance with guidelines has increased in targeted schools in North Charleston. Although communities around North Charleston passed no smoking ordinances, the mayor of North Charleston continues to refuse to support a no smoking policy as a municipal ordinance.
- Chronic disease management activities have been promoted by the faith based organizations within the community. There has been no increase in private industry (weight watchers, gyms, or other exercise classes) in the community. North Charleston remains a community with a significant number of residents live below the poverty level.

Goal 2: Creating a Movement

Objective: To collaborate with the community (neighborhood associations, schools, worksites, and faith based organizations) to provide a quarterly event promoting healthy eating and active living that may

include recreation, education and/ or screening in each of the high school attendance zones in North Charleston.

- Community-based programs on healthy eating/active living annually that promotes food literacy and may include community recreation, education, and screening for blood pressure and other biomedical markers such as lipid and glucose screening, and BMI calculations (Flu shot clinics, health fairs, nutrition workshops, an obesity summit and a family literacy program).

Goal 3: To increase availability and accessibility to healthy foods in North Charleston

Objective: To increase the availability of healthy foods to residents of North Charleston by creating new policies, and new sources of healthy foods.

- Increase knowledge about federal food assistance programs and eligibility requirements and provide referrals to federal food assistance programs
 - Dissemination of information in community settings
 - Referrals to federal food assistance programs
- Implementation of *The Healthy Cookbook*
- Developed a nutrition lesson for a CCSD family literacy program, *Abrazos*. From this program 25 Hispanic participants indicated an interest in creating a healthy cookbook containing favorite Hispanic recipes. The MUSC College of Nursing HEZ staff worked with the women to develop a sustainable project to produce and disseminate a healthy cookbook with Hispanic favorite recipes. South Carolina Educational Television (*SCETV*) interviewed the women about working on the healthy cookbook and aired the piece on December 4, 2012 as part of *The Big Picture*, which focuses on the social determinants of health.
- **Food Insecurity Survey**
 - Program Coordinator initiated a project that examined food insecurity among the local Hispanic population. Using the publicly available USDA food security survey, preliminary data was obtained from the administration of the survey to 15 Spanish-speaking community members. The survey examined the availability and usage of federally funded food programs among Hispanics. Nationally, as well as locally, the Hispanic population has lower enrollment in these programs designed to increase food security. The research project gathered local baseline data to collaborate with local agencies to promote enrollment in federal supplemental nutrition programs.
- **Mini-grants for Urban Gardens**
 - Clemson Extension and The City of North Charleston, Department of Recreation in collaboration with Healthy North Charleston and the Health Empowerment Zone, installed three community gardens in North Charleston between September 2011 and August 2012. A mini grant provided by Healthy North Charleston provided the financial support for the development of the gardens, located at Minor Crosby, Charleston Farms and Felix Pinckney Recreation Centers. Each of the gardens was designed to fit the needs each community while embracing the same guiding principles:
 - Promoting physical activity and quality outdoor experiences
 - Motivating kids to eat more fruits and vegetables
 - Providing opportunities for hands-on learning, inquiry, observation and experimentation
 - Offering active, engaging connections to academics utilizing the Junior Master Gardener Program materials and workbooks
 - Building an understanding of and respect for nature and our environment
 - Teaching kids to nurture and care for living things while developing patience
 - Giving children a sense of pride in their accomplishment
 - All gardens were designed to be site-specific, low maintenance and utilize best garden management practices. Designed as jumping off points for adult and youth gardening education in their respective communities.

Goal 4: Create an environment that supports physical activity

Objective 1: By June 2013 to have completed walkability surveys at five elementary schools in North Charleston and disseminated the results to school wellness committees, PTAs, and neighborhood associations.

Objective 2: To facilitate the mission of the school wellness committees in North Charleston by linking the committees to existing resources and building capacity for acquisition of new resources to promote physical activity in school aged children.

- Walkability Checklist completed for five elementary schools in North Charleston (Burns, Chicora, Dunston, Hursey, and Mary Ford) and results disseminated to school wellness committees for development of follow-up action plan.
- April 16, 2013: lesson conducted with 25 Spanish-speaking women about importance of physical activity and consequences of inactivity.
- Navigating CARTA for low literacy populations (video): Exploring the bus system (CARTA) in the Midland Park community in North Charleston brought about inquiries of safety, knowledge, and readability. In collaboration with community members a six-minute video was produced to instruct residents on how to use the bus system and key routes to services. Video is available in computer classroom of the Midland Park Community Center for general use.

B3e. Healthy People in Healthy Communities

Directors: Marilyn A. Laken, PhD, Professor of Nursing and Medicine; Brent Egan, MD, Professor General Internal Medicine/Hypertension

Goal: Promote awareness of risk factors for chronic disease, behaviors to achieve healthy lifestyles, and access to effective healthcare and necessary medications as keys to lifelong health promotion and disease prevention.

Distinguishing Characteristics: Engages in community dialogues about ongoing needs and resources; provides health education and small grants for local programs; supports health screening/referral for care; assesses and overcomes barriers to obtaining healthcare and medications; strengthens local healthcare delivery network; builds local capacity for sustainability; promotes and assists adoption of electronic medical record (EMR) systems and HIT.

Program Summary:

The objective of this project is to increase preparedness for military and civilian service and pursue the vision of 'Healthy People in Healthy Communities' through awareness, education and outreach efforts. The focus is to establish (i) healthy lifestyles and (ii) access to primary healthcare and medications to promote the prevention, detection, treatment and control of major chronic diseases. Achieving this goal involved reaching people where they live, work, worship, learn and receive health care; we focused on collaborative efforts that would allow us to interact with ongoing established activities within churches, schools, worksites and medical clinics or practices. The most important achievement is to have developed a strong relationship and trust with community members (stakeholders, leaders, residents) through collaborative discussions, education, awareness, understanding and respect for their beliefs and health interests. Their active participation and involvement during the past four years has proven important in adopting and sustaining healthy programs once grant funding expires. The SEVIEW team has been active in working with stakeholders to create an asset map of a wide variety of resources throughout Williamsburg County. We anticipate this resource will be very useful in maximizing program efficiency, i.e., matching needs and resources, not only for the duration of this project but also in the future years. It is part of equipping and resourcing the County for sustainable success.

Approval from Institutional Review Board (IRB) took longer than expected. As a result, we could not engage in screening and referral efforts that included capture of personal health data as we hoped. However, since several stakeholders were already engaged in some planned events, we provided technical support and expertise whenever and wherever possible without engaging in data collection. While awaiting regulatory approval, the team has been busy; Drs. Egan and Laken discussed creating a Williamsburg County asset map composed of geo-coded local resources that would assist all stakeholders, build local capacity to improve health and sustain local efforts. Mr. Shaun Wagner would lead the effort in development of this tool.

The SEVIEW program is at the center of our team's long-term focus, i.e., health promotion and disease prevention across the lifespan. Consequently, we have a number of related activities, which interact dynamically with and support our work in SEVIEW. These projects include significant capture of cardiovascular risk factor data at the patient and practice level. Analyses and reporting of these data is summarized in abstract form and a list of related publications. The research has led to funded and pending applications to improve health and reduce disparities with a focus on hypertension and diabetes.

Summary of activities

Established effective dialogues with schools, churches, worksites, practices and local governing/policy groups; assessed local availability and gaps in resources; and re-evaluated initial approach to building local capacity. Identified need for time extension/additional funds to: promote adoption of EMR; fully engage providers in the Quality Improvement Network (QIN); establish local Health Information Exchanges (HIEs) and link them to the National Health Information Network (NHIN); assess impact of clinical automation in the care delivery process, and assess impact on qualitative and quantitative measures of lifestyle change and use of primary healthcare services and medications.

Who Did We Reach?

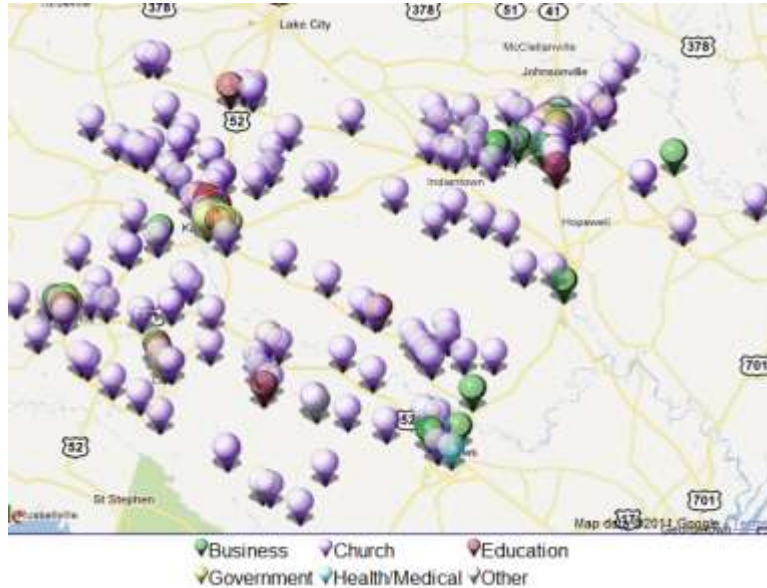
- Churches
 - Marion Missionary Baptist Church, Salters, SC (Mini-Grant recipient)
 - St. Peters Way of the Cross Church, Andrews, SC (Mini-Grant recipient)
 - Friendship United Methodist Church, Nesmith, SC (Mini-Grant recipient)
 - St. Paul UMC, Nesmith, SC; IGA Parking Lot, Kingstree, SC
 - Elijah United Methodist Church, Kingstree, SC
 - Greater Bethel AME Church, Kingstree, SC
 - Trinity Missionary Baptist Church, Greeleyville, SC
 - Bethlehem AME Church, Hemingway, SC
 - Kingstree Presbyterian Church, Kingstree, SC
 - Mt. Zion United Methodist Church, Kingstree, SC
 - The Ark Food Ministry, Kingstree, SC
 - Bethesda UMC – Kingstree, SC
 - Bethesda UMC – Cades, SC
 - St. Luke United Methodist Church, Salters, SC
- Worksites
 - Trebol USA, Inc., Andrews, SC
 - Tupperware Inc., Hemingway, SC
 - Palmetto Synthetics, Kingstree, SC
 - Farmer's Telephone Cooperative, Inc. (FTC)
 - Santee Electric Cooperative, Inc. (SEC)
 - Hemingway Apparel Manufacturing, Inc., Hemingway, SC
 - Don's Car Crushing, Hemingway, SC
 - House of Raeford Food Reprocessing Plant, Stuckey, SC
 - Hemingway Hardware and Supply Hemingway, SC
 - Phoenix Manufacturing and Recycling Co., Hemingway, SC
 - Stuckey Auto Parts, Hemingway, SC
 - Stuckey Brothers Farm Parts, Stuckey, SC
 - Stuckey Brothers Furniture, Stuckey, SC
 - Wilder Bros. Furniture, Greeleyville, SC
 - Kenney's Bar B Q, Hemingway, SC
 - Mishoe Oil and Propane Co., Inc., Greeleyville, SC

- The Seafood Shack, Hemingway, SC
- The Wise Co., Greeleyville, SC.
- Community Organizations
 - Williamsburg Regional Boys to Men Club, Inc., Kingstree, SC (Mini-Grant recipient)
 - Williamsburg Home Town Chamber, Kingstree, SC (Mini-Grant recipient)
 - Parents Anonymous of South Carolina, Inc., Kingstree, SC (Mini-Grant recipient)
 - Williamsburg County Disabilities & Special Needs Board (WCDSNB), Kingstree, SC (Mini-Grant recipient)
 - Kingstree Recreation Department, Kingstree, SC
 - Vital Aging, Kingstree, Hemingway and Greeleyville, SC
 - Trio Community Action Organization, Trio, SC
 - Williamsburg County Interagency Council, Kingstree, SC
 - Williamsburg County Salvation Army, Kingstree, SC
 - Kingstree Women's Connection Group, Kingstree, SC
 - Williamsburg County Diabetes Coalition, Kingstree, SC
 - Coastal Collaborative American Cancer Society, Myrtle Beach, SC
 - Kingstree Recreation Department Exercise Class, Kingstree, SC
 - Williamsburg County Emergency Management, Kingstree, SC
 - Alpha Kappa Alpha Sorority, Kingstree, SC
 - Williamsburg County Farmers Market, Kingstree, SC
 - Johnsonville Adult Day Care, Johnsonville, SC
- Healthcare Organizations
 - Hope Health Inc., Florence, SC
 - Pee Dee SC DHEC, Kingstree, SC
 - Williamsburg County Mental Health Facility, Kingstree, SC
 - Palmetto Primary (Live Oak), Kingstree, SC
 - Andrews Medical Center, Andrews, SC
 - Andrews Family Practice, Andrews, SC
 - Williamsburg Regional Hospital, Kingstree, SC
 - Hemingway Family Practice, Hemingway, SC
 - Kingstree Family Practice, Kingstree, SC.
 - Collaborations initiated with Morehouse School of Medicine – Atlanta, Georgia and Medical University of South Carolina, Hollings Cancer Center (MUSC)
- Schools
 - C.E. Murray High School, Greeleyville, SC (Mini-Grant recipient)
 - D.P. Cooper Elementary School - Salters, SC (Mini-Grant recipient)
 - Williamsburg County First Steps to School Readiness Partnership Board- Kingstree, SC (Mini-Grant recipient)
 - Hemingway Elementary, Middle and High School, Hemingway, SC
 - Greeleyville Elementary School, Greeleyville, SC
 - Williamsburg Technical College, Kingstree, SC
 - Johnsonville Schools, Johnsonville, SC
 - Anderson Primary School, Kingstree, SC
 - Kenneth Gardner Elementary School, Kingstree, SC
 - Kingstree Middle and Senior High School, Kingstree, SC
 - Williamsburg County Magnet School of the Arts, Kingstree, SC
 - Williamsburg Academy (Private), Kingstree, SC
 - Youth Academy Charter
- Government Organizations
 - Williamsburg County Government

- Town of Kingstree - Kingstree, SC
- Williamsburg County School District, Kingstree, SC
- Williamsburg County Development Board, Kingstree, SC

Please see **Fig. 10** to see the Williamsburg County Data Collection/Asset Mapping

Figure 10. Williamsburg County Data Collection/Asset Mapping



http://www.ccihealth.org/htn/se_view_map.html

B3f. Telemedicine in the Evaluation of Alzheimer's Disease in a Rural, African American Population

Director: Jacobo Mintzer, MD, Professor, Department of Neurosciences

Goals: Investigate underlying factor(s) contributing to the fact that Alzheimer's disease (AD) afflicts more African Americans than whites; develop knowledge and interventions that will help close this gap

Distinguishing Characteristics: SC's elderly population is diverse and largely rural, while most physicians trained to provide geriatric care are concentrated in a few urban areas. For evaluation, diagnosis and appropriate treatment for AD and other neurodegenerative diseases of aging, the situation is critical. This initiative uses telemedicine to meet healthcare needs, improve healthcare delivery systems, and ultimately reduce health disparities in rural African Americans.

Program Summary:

The rapid and steady raise in the prevalence of dementia is a major public health problem. This is especially true for South Carolina, where, according to the 2007 Annual Report of the SC Alzheimer's Disease Registry³⁵, the number of dementia cases is expected to increase from approximately 50,000 in 2005 to over 90,000 by the year 2030. South Carolina is home to a large African American elderly population concentrated primarily in rural areas. This population suffers from a lack of access to healthcare and is largely under-served medically. South Carolina follows national trends, with a higher prevalence of African Americans suffering from Alzheimer's disease when compared to White Non-Hispanics.³⁶⁻⁴⁰ Despite the high prevalence rate among African Americans in South Carolina, however, very few African Americans are diagnosed and treated. Many of these issues are related to practical issues, such as difficulties in reaching diagnostic and treatment centers, and emotional issues, including lack of ability of the local trusted medical team to provide diagnosis and treatment for Alzheimer's disease, and the natural reluctance of the elderly subjects who have learned to be suspicious of the medical system after a lifetime of discrimination. Thus, we have focused our effort on the development of new methodology to diagnose subjects in their own environment, using telemedicine as a tool to overcome both the practical and emotional barriers to access to healthcare. Specific Aims for this project:

- To evaluate the feasibility of using “Telemedicine,” or video-conferencing, for evaluation and diagnosis of African Americans suffering from Alzheimer’s disease and other cognitive disorders.
- To explore the validity and reliability of this approach in the targeted population and determine its applicability in clinical practice by comparing Telemedicine diagnosis of Alzheimer’s disease with in-person diagnosis of Alzheimer’s Disease.

Expectations are that telemedicine video-conferencing will allow patients to be diagnosed accurately and reliably from their primary care physician’s office via specialist in a diagnostic and treatment center. In addition the project will provide through town-hall meetings, knowledge to health-care professionals and African Americans in rural communities in South Carolina about AD and this novel approach to diagnosis. Finally, it is expected to serve in developing a practical, standardized process for using telemedicine to diagnose Alzheimer’s disease that can be implemented statewide and ultimately on a national level. Ultimately, this project improved the ability for African-Americans living in a rural community to seek medical evaluation of dementia-related symptoms.

For many rural, African-American residents, access to specialized care is limited due to distance and socio-economic factors. The design of the project was built on the assumption that clinical practices would be interested in receiving help in providing diagnosis of AD or dementia and that the practice would be receptive to obtaining guidance in how to serve this population. Our assumptions were incorrect, many of the physician’s that were invited to participate in this project chose not to acknowledge the presence of AD or dementia in their practice. Instead, they attributed the symptoms to the fact that the patient’s were old and statements such as “of course they forget.” A second assumption was that if provided adequate training and education to the rural practices, the clinician and their teams would be self-sufficient in recruiting patients into the project. In summary, we encountered a number of unexpected obstacles that needed to be addressed before actual recruitment into the study was started. After, these and other barriers that limited our ability to interact with rural practices were adequately addressed “The telemedicine in the evaluation of Alzheimer’s disease in a rural, African-American population” project enrolled approximately 68 subjects with 54 assessments occurring via telemedicine successfully with a 21% failure rate over the course of the study. Out of these 68 patients, 18 participants were randomly selected for assessment via telemedicine as well as in-person as a means to examine the validity and reliability of this approach. During the course of the project, it was discovered that telemedicine assessments were as effective as in-person assessments, evident through identical diagnoses. Additionally, prior to contrary belief, the rural African-American population was highly receptive to participating in the study as well as attending the planned community outreach events in their communities. Ultimately, we developed and validated the methodology that could have a major impact in the diagnosis and treatment of African-Americans in rural communities. Our project’s long-term vision is to develop practical, standardized processes for the diagnosis and treatment of Alzheimer’s disease in rural, African-American populations that can be implemented statewide and ultimately on a national level.

Identified and confirmed initial and consistent barriers

- At the initiation of the project, we found that to introduce a new concept in a busy rural clinical practice was difficult and the buy-in process was labor intensive, as it required a practice culture change. In further identification of barriers, we realized there were difficulties with limited local resources. Many of these practices are short-staffed and barely able to handle their clinical patient workload. Introducing a project that would require significant time from the physician and staff outside their demanding patient load proved challenging. Identifying appropriate rural practices that treated the targeted population and would be interested in joining the project as collaborating site was very tedious and time-consuming.
- After identifying practices that did agree to participate, we continued to encounter obstacles with recruitment due to limited staff resources. Partner sites were not enrolling patients because they did not have the staffing resources to pull away from clinical work to devote to the research effort. Effort was made to re-train partner sites on the proper way to recruit patients into the study.
- Shortly after re-training partner sites, patient enrollment began, but involved complexities unforeseen. The expectations of the study visit for the patient/caregiver were not aligned with the expectations of the

partner site. We found that patients that we expected to enroll in the project would not sign the informed consent once our team provided additional details about the project. Upon further investigation, we discovered that the rural practices were not adequately explaining the project to the patient or caregiver, and the patient and caregiver were not educated prior to meeting with our team as to the importance of the evaluation.

- We took additional time to provide further education and provide resources to ensure the rural practices were adequately communicating the purpose, benefits, goals and time commitment to each potential patient. Additional training and dialogue with the partner site team was provided and was crucial in preventing miscommunication with future patients/caregivers enrolled.
- Enrollment continued and evaluations were conducted via telemedicine. African-American families were highly receptive to the concept of receiving attention for dementia care in conjunction with their primary care physician and a clinician who specialized in the area of dementia.
- After realizing a minimum of two partner sites would be needed to complete the project, we identified and added an additional rural practice, Abbeville Neurology. Initial conversations began with Dr. Glen Scott with Abbeville Neurology during the latter quarter of the second year of the project. The appropriate protocol was taken to ensure the partner site received training and IRB approval before recruiting patients or conducting assessments.
- With fully functioning partner sites, the bulk of patient enrollment and assessments continued successfully over the past year. These consistent enrollments and assessments lead to 100% completion of the eighteen assessments involving randomly selected patients participating in both in-person and telemedicine assessments as a means to test and examine the validity of the tool.
- Another obstacle involved successfully scheduling time for the assessments to be completed. Many participants in the project, including the patient, caregiver, study team members, rural physician and staff often had conflicting schedules so accommodating everyone's schedules proved time-consuming.
- Although the total number of patients enrolled in the study (N=68) was lower than initially anticipated, this is attributed to the initial, consistent challenges noted in the preceding paragraphs.

Patient Diagnosis

- A highlight of the study lies in the number of enrolled patients, previously undiagnosed and untreated for AD, who received a diagnosis after our assessment. These diagnoses made through telemedicine were crucial elements in helping both the patient and their family to begin developing an effective plan of care. The relationship between the specialist and the patient's primary care physician was invaluable as the patient and the caregiver could coordinate a plan of care with both physicians serving as resources simultaneously. This reveals one of the benefits of the project as patients who had limited access to care, consequently were able to receive a diagnosis and begin to plan responsibly for their futures.
- It should be noted that after a preliminary review of the data obtained, telemedicine assessments were as effective as in-person assessments, illustrated by the high occurrence rate of identical diagnoses.

Initiation of Descriptive Data Analysis

- As the last remaining diagnosis visits begin to come to an end, we have focused our attention on initiating the descriptive data analysis component by having fellow MUSC team members added to the study. With IRB approval, the data analysis team noted they will begin compiling the data and this aspect should be completed no later than July 31st, 2014, which coincides with the termination date of the project. We are confident that the data obtained through the analysis will serve as a reflection of the validity and effective utilization of telemedicine in the assessment of Alzheimer's disease and other cognitive disorders garnering attention both on a statewide and national level.

Dissemination of results to communities--Community Outreach Events

- Successfully conducted two community outreach events in rural towns such as Andrews, SC and Abbeville, SC. Our primary goal for each event involved informing the rural community, particularly the African-American population, about Alzheimer's disease, the benefits of early detection and how

modern day technology such as telemedicine is allowing rural residents to obtain the care they need without leaving their primary care physician's office. Our team built relationships within the community with fellow community leaders such as town mayors, partner sites, fellow physicians, foundation coordinators and the South Carolina Alzheimer's Association chapter to create a communal event in which attendees could learn more about the disease as well as the promising discoveries we encountered through the course of the project.

- The first community outreach event occurred at the Abbeville Area Medical Center on June 3rd, 2014. Attendees were provided with tote bags filled with education resources from various entities such as MUSC, the Alzheimer's Association and more. This material was an essential component in providing resources pertaining to dementia and encouraging healthy lifestyle choices such as keeping one's mind active. Each presentation began with a brief introduction and thanking of community collaborators followed by an extensive but user-friendly presentation about Alzheimer's disease by principal investigator, Dr. Jacobo Mintzer. Upon conclusion of background information on the disease, the SEVIEW coordinator, Ms. Roaden conducted a brief overview for attendees, demonstrating how telemedicine can be effectively used in assessment of Alzheimer's disease. Town hall format facilitated open forum for attendees to ask questions, express concerns or suggest more educational events within their area. The information and results served not only the attendees, but the rural medical community as they gained knowledge of cognitive impairment, indicator signs and future methods of diagnosing Alzheimer's disease. These presentations proved highly effective as noted by the number of attendees and their subsequent inquiries regarding future presentations.
- The second community outreach event occurred at Ebenezer Missionary Baptist Church, Andrews, SC on June 25, 2014. Partnerships were formed successfully with community leaders including the Mayor of Andrews and the South Carolina Alzheimer's Association chapter. The presentation, conducted in the manner as before, produced a strong turn-out of members of the rural African-American population who were highly receptive to the presentation, and requested future educational presentations in their area.

Key Research Accomplishments

Southeastern VIEW Administrative Core (SEVAC)

- **Communication/Coordination Activities:**
 - Weekly staff meeting with the SEVIEW PI and Program Manager.
 - Monthly teleconferencing with SEVIEW Administrative Core to review SEVIEW progress.
 - Bi-monthly communication with the TATRC Program Officer.
 - Bi-monthly meetings of the SEVIEW Executive Committee.
 - Leadership and consultation bi-monthly through individual project meetings to address programmatic issues, strategic planning, trouble shooting, problem resolution, project evaluation.
 - Attended open forums on the MUSC campus and in SEVIEW communities, at least monthly e.g., 'Grand Rounds,' 'lunch-n-learns,' seminars, speakers, panel discussions, 'town meetings.'
 - Robust website development, maintenance and enhancement.
 - Aggressive social media networking.
 - Coordination with MUSC Business Development and Marketing on public relation activities to promote awareness of SEVIEW outreach and expand SEVIEW marketing tools and resources.
 - Consulted with the Office of Research and Sponsored Programs staff as needed.
 - Meetings with the Director of Grants and Contracts Accounting as needed.
- **Administrative/Fiscal Activities:**
 - Grants/contracts administration, human resources administration, business operations management and procurement.
 - Monthly reviews of expenditure reports for accuracy and compliance with federal and

institutional guidance.

- Regular reviews of activity and costs per initiative to identify under/overutilization of resources or disproportionate use of resources by any area, with additional review, adjustment or action as needed.
- Guidance and assistance to comply with all reporting requirements of DOD and other cognizant entities.

- **Integrative Activities:**

- Bi-monthly strategic planning reviews and sharing of ‘best practices’ for community engagement and coordinated communications in the locales that host the SEVIEW initiatives
- Ongoing program assessment and evaluation within the overall SE Evaluation Plan.
- Continued leadership, visible participation and programming of annual National Conferences on Health Disparities, Community Leadership Institutes and Technical Assistance Workshops.
- SEVIEW PI provided consultation in the development of an article, which featured SEVIEW among programs in the October/November 2012 edition of Progressnotes.⁴¹

MUSC Public Information and Community Outreach (PICO) Initiative and Community Institutes for Traditional and Nontraditional Leaders

- Community Leadership Institutes (CLIs)
 - Two-day workshops that focus on matters such as the role of government, youth issues, health disparities, economic development, transportation and housing challenges – all through the linkage of scientific, political and local communities.
 - Total CLIs: 19
- Technical Assistance Workshop (TSWs)
 - One-day grant writing workshops that teach the community how to locate grant-funding opportunities and prepare and manage a successful grant application.
 - Total TAWs: 10
- Annual National Conference on Health Disparities
 - Agenda includes international speakers and presenters, in individual and panel formats; addressing prevention, social determinants, personal responsibility to reduce health disparities.
 - Locations: Charleston, SC in 2011; Little Rock, AR in 2012; St. Thomas, US Virgin Islands in 2013; Long Beach, CA in 2014
- Statewide Educational TV: *Our Health Series*
 - Examines health-related issues/conditions of particular interest to South Carolinians (Metabolic Syndrome, HIV/AIDS, stroke, cancer, health-status disparities, access to care, youth violence, rural healthcare); delivers information to a statewide audience; series gained audience of approximately 25,000 households for each airdate.
 - Programs Include:
 - 2012: *America’s Armed Forces: Time for a Checkup*⁴²
 - 2013: - *Our Nation’s Health: A Focus on Social Determinants*;⁴³ *Zip Code: Your Neighborhood, Your Health*⁴⁴
 - 2015: *My Health: What’s Climate Got To Do With It?*
- Interactive Website: *Hands on Health South Carolina*
 - Examines health-related issues/conditions of particular interest to South Carolinians (Metabolic Syndrome, HIV/AIDS, stroke, cancer, health-status disparities, access to care, youth violence, rural healthcare); employs viewer-friendly format to deliver information to a statewide audience; audience of approximately 25K households for each program’s initial airdates
 - Web Address⁴⁵
 - Health Exhibits: Health SC staff conducted over 50 comprehensive website presentations to show individuals how to access health resources via the website
 - Statistics: 214,382 new and returning users; total of 403,319 page views

Health Careers Academy and Junior Faculty Development

- **Health Careers Academy**
 - One hundred twenty students have an increased knowledge of:
 - Respective career paths and specializations (dental, medicine, occupational therapy)
 - Requirements for admission to health professions programs
 - Financial aid resources and opportunities
 - Resources to support academic program matriculation, retention and progression
 - Definitions, causes, maintenance, effects, treatments of the identified health-related topic
 - Application of skills to promote higher level reasoning and interactions for successful matriculation
- **Junior Faculty Development**
 - Debbie C. Bryant, DNP
 - JFD funds allowed Dr. Bryant to complete the Doctor of Nursing Practice (DNP) program at MUSC that addresses the most contemporary aspects of expert clinical practice and in depth knowledge and experience in leadership, health systems design and evaluation, evidence-based practice, health policy, and applied research.
 - Dr. Bryant received promotion to Director of Partnerships for Healthcare Quality Research at MUSC. JFD program provided her with practical experience in conducting community-based health promotion intervention research and practice with individuals in SC through her work with the Avon Foundation, the Robert Wood Johnson Foundation (RWJF) and the Community Compass Project. Dr. Bryant efforts earned her the 2012 Robert Wood Johnson Foundation (RWJF) Community Health Leaders Award. She was also featured in RWJF Scholars, Fellow & Leadership Diversity Marketplace and in December 2012, in Ebony.com wellness and empowerment/Health article “Fighting Cancer One Women at a Time.”⁴⁶
 - Ida J. Spruill, Ph.d. received the FY 2012 Presidential Early Career Award for Science and Engineering (PECASE) Award, the highest honor bestowed by the United States Government on science and engineering professionals in the early stages of their independent research careers. Received a promotion to Associate Professor at MUSC.
 - Dr. Spruill is the Co-PI on a recently funded R-21 grant entitled, “Glycation as a Mechanism Promoting Cancer Disparity”. She also continues to recruit partners to develop community education seminars for Orangeburg and Dillon County.

Stroke and Stroke Risk Reduction Initiative (SSRI)

The American Heart Association recently announced the four institutions that will form the American Heart Association Strategically Focused Disparities in Cardiovascular Disease Research Network: the Medical University of South Carolina (Director: Robert Adams, MD, MS), Morehouse School of Medicine (Director: Herman Taylor, Jr., MD, MPH), Northwestern University (Director: Myles Wolf, MD, MMSc), and the University of Colorado, Denver (Director: Spero Manson, MD). Over the next four years, these centers will receive a total of \$15 million, and each center will undertake three research projects focused on factors such as socioeconomic status and genetic risk profile, which may underlie the disproportionate impact of cardiovascular diseases and stroke in some population groups. Each center will train three fellows, and all four centers will meet on a regular basis and engage in collaborative projects to accelerate information exchange and ideas. In addition to Disparities in CVD, the AHA has funded Strategically Focused Research Networks for Prevention and Hypertension, and two new topics have been announced for 2015-16: Heart Failure and the Go Red For Women Research Network. Other key accomplishments emanating from these aims are outlined below:

Aim I: SSRI Program Administration

- **Team Building and Program Coordination**
 - SSRI Team holds weekly meeting schedule with work-scope/actions, reviewed weekly.

- Expanding the team as appropriate based on partner interface/collaboration.
- SSRI representatives attended all SEVIEW Executive meetings, Strategic Planning retreats and other function, reporting back to the team.
- All reporting requirements were met.
- **Interfaced and collaborated with potential partners on an ongoing basis and as appropriate**
 - Interfaces/collaborations of note included:
 - MUSC Hollings Cancer Center (HCC) - Cancer Disparities Program (CDP)
 - MUSC Community Health Partnership & Community Engaged Scholars
 - S.C. Statewide AHEC program
 - College of Health Professionals, Stroke Rehabilitation Research Division
 - USC Stroke Program (Dr. Souvik Sen)
 - MUSC Hypertension Initiative (Sheryl Mack, Brent Egan)
 - CEASE: Community Engaged Assessment to facilitate Stroke Elimination (SCTR)
 - EMS of Charleston, Dorchester and Berkeley Counties
 - Dementia – SEVIEW Alzheimer’s project
 - Hypertension – M. Laken’s SEVIEW project
 - Invited potential collaborators to SSRI Team meetings. Several of these interfaces led to further partnerships and/or led to the addition of a SSRI Team member.
- **Conducted site analyses of potential external partners**
 - Determined ROIs, identified potential partners, examined Epidemiology Profiles, and contacted potential partners, as appropriate, including:
 - Clarendon Hospital: Williamsburg County - Manning, SC (I-95 Corridor)
 - Toumey Regional: Sumter County - Sumter, SC (I-95 Corridor)
 - Colleton Medical Center: Colleton County - Walterboro, SC (I-95 Corridor)
 - Bamberg County Hospital: Bamberg County – Bamberg, SC (I-95 Corridor)
 - The Regional Medical Center of Orangeburg – Orangeburg, SC (I-95 Corridor)
 - Beaufort Memorial Hospital – Beaufort, SC (Coastal Carolina)
 - Based on analyses, engaged existing partners in SSRI initiatives as appropriate:
 - Williamsburg – CREST/REACH program expansion and training
 - Georgetown – CEASE pilot community
- **Promoted the aims of SEVIEW and SSRI whenever appropriate**
 - Attended numerous meetings/conferences and created a wide variety of promotional materials.
 - Provided a number of program presentations.
- **IRB/ORS: Developed study designs, protocols and data requests for review/approval**
 - IRB Approval: Initial research protocol designed, developed, submitted & received approval.
 - TATRC Approval: Received on January 25, 2012

Aim II. Benchmark regions with & without REACH and evaluate the impact of telemedicine

- **Access to Care:**
 - Evaluated access to expert stroke care pre-and post- REACH implementation: Collecting census data and initial analysis being refined and completed.
 - Determined the number of residents with “access to expert stroke care.”
 - Findings were presented at an international conference and an article was published.
- **Awareness of symptoms, appropriate response times, and attitudes regarding treatment:**
 - Started survey with the IRB-approved protocol to contact all patients having had a REACH Telestroke consult in order to obtain information related to their recognition and response to the symptoms, which led to their REACH stroke consult.
 - REACH patients were surveyed.
 - Analysis of findings to be organized and presented.
 - The SSRI Team is reviewing manuscript draft.

- **Time from Onset of Symptoms to Emergency Department**
 - Requested EMS “run sheets” on all REACH patients that used EMS: DHEC data request was developed, reviewed & submitted for two NEMISIS II data sets: one identified for REACH patients and one de-identified for all
 - Data release is still pending DHEC approval.
 - Examined critical time point data in REACH as potential evaluative criteria
 - Examined feasibility of conducting a community-based assessment regarding related attitudes/opinions (e.g. 911-use, reasons for time delays, potential interventions)
 - Created the Community Engaged Assessment to Eliminate Stroke (CEASE) Proposal in partnership with the SEVIEW Community Engagement Scholar leadership team and received SCTR Pilot Project funding.
- **Use of Alteplase (tPA):**

Requested two data sets from ORS to assess tPA use and the impact of REACH. Data matching, required for final data release currently being obtained.

Aim III. Provider Education: *Developed, implemented and evaluated a Stroke CME program*

- **Provided targeted stroke and stroke prevention CME programs to health providers in the ROI:**
 - Developed the CME concept and completed the CME application process.
 - Examined the current CME training sites and partnerships and further promoted its use to these partners.
- **Identified gaps in knowledge, behavior & outcomes and design CME programs specific to these needs**
 - Continue to interview key personnel at partner sites to determine appropriate CME program format.
 - Collaborating with Area Health Education Center (AHEC) to assess more training needs and uses of the South Carolina Health Occupations Outreach Learning System (SCHOOLS) distance-learning network.
- **Administered the CME programs through the traditional, in-person CME venue and utilizing distance learning technology**
 - Selected presenters, topics and training dates.
 - Developed/administered program curriculum live.
 - Aired live presentations across the state using the AHEC SCHOOLS Network thus expanding community access to training.
- **Created a bank of enduring stroke and stroke prevention education material that can be accessed electronically**
 - Collected all training materials for future use, as appropriate.
 - Recorded all CME broadcasts and offer programs online for CME credit
 - Planning Acute Stroke Management modules

Aim IV. Epidemiology Core: *Developed Epidemiology Profiles & began to acquire/maintain overall data sets as a common resource for all SEVIEW cores.*

- **Acquire/maintain databases pertinent to SEVIEW projects**
 - Emergency room and hospital data
 - Socioeconomic status (SES) and Census data
- **Analyze and report data utilize the three ROIs**
 - Collected, standardized and reported initial disparities data by ROI in the first SEVIEW Epidemiology Profile.
- **Completed Aim I: Determine Region(s) of Interest (ROIs)**
 - Defined Primary ROIs grouped by county into 3 regions
 - I-95 Corridor
 - Coastal Carolina

- Rest of S.C.

Aim V. Stroke Care - REACH-MUSC Telemedicine Program: *Improve access to care through the use of telehealth technologies.*

- **Site Updates:**
 - Current REACH MUSC Telemedicine Network has 13 sites 2,031 hospital beds and 379,875 annual ED visits. This network provided over 4,388 consultations by the end of FY2014.
 - Visited and retrained REACH sites.
- **Program Expansion:** *Collaborate & examine feasibility to expand access to other specialties using REACH technologies*
 - **MUSC CREST (Sepsis & Trauma) Program:**
 - CREST was successfully established using the REACH platform.
 - CREST/REACH staff held collaborative meetings
 - First combination CREST/REACH site was established at Williamsburg Regional
 - **Other Specialties:**
 - Examined feasibility of using REACH technologies for several other specialties, hospitals are interested in telemedicine for in-patient consults using REACH.
 - Provided consultative services and support for other specialties exploring telemedicine.
 - **Primary Care setting:** Began to develop a model for expansion into primary care
- **Patient Care/Follow-up:**
 - **Physician Portal:** *Allow referring physicians to access their patients' EMR at MUSC in order to improve communications and continuity of care.*
 - Collaborated with the MUSC Physician Liaison Program to introduce the E-Care Net Viewer/Oacis program to REACH partner sites.
 - Portal introduced to all new REACH sites as a presentation during initial MUSC CME Training Program and applications distributed.
 - Provided contacts at existing REACH sites to Liaison for further dissemination.
- **Tell the Story:** *Document qualitative patient care information*
- Developed audio-video presentation of patient stories, posted online and at events.
- Continue to work with marketing as we collect/disseminate patients' stories.

Heart Health – Preventive Cardiology Research Center

- RWJF New Connections and CVD-PRIDE selection for Center faculty and SEVIEW JFDP scholar Tiffany Williams, DNP, PNP
- ASE Career Development Award and AAP Research Fellowship Award for Center faculty Shahryar Chowdhury, MD
- DHA recipient and American Board of Obesity Medicine certification for Center director Melissa Henshaw, MD, MSCR, DHA

SC TeleSupport: Diabetes Management Initiative (Effectiveness of Technology-Assisted Case Management in Low Income Adults with Type 2 Diabetes

- **FY13:** the team recruited 114 participants; 69 participants have completed the study, and 83 have completed the three-month follow-up assessment; It is important to note that the project team could not complete the randomization and follow-up of 200 subjects as originally planned. The project had to stop enrollment and follow-up, as funds were exhausted.
- **FY14:** the team focused on analyzing the data (**Table 11**).

Table 11: SC TeleSupport Recruitment

Recruitment Site	FY11	FY12	FY13
Enterprise, SC	40	0	1
Summerville, SC	31	0	0
Johns Island, SC	3	0	0
Downtown Chas.	0	25	5
Hollywood, SC	0	1	8

Tele-Critical Care to Reduce Rural Health Disparities

- A manuscript titled “A mixed methods descriptive investigation of readiness to change in rural hospitals participating in a tele-critical care intervention” written by SEVIEW investigators was published in BMC Health Services Research (Zapka et al.: A mixed methods descriptive investigation of readiness to change in rural hospitals participating in a tele-critical care intervention. BMC Health Services Research 2013 13:33. doi:10.1186/1472-6963-13-33).
- Posters and abstracts were presented to colleagues nationwide at numerous conferences, such as the American College of Chest Physicians’ in 2011 and 2013 and the American Thoracic Society International Conference in 2013 and 2014.
- Submitted All IRB required documents and approvals, continuing reviews were received.
- Received database of all 2010 SC patients with diagnosis of sepsis and respiratory failure from SC Office of Research Statistics.
- Gained valuable insights on challenges of developing a successful telemedicine program while working as a team showing solidarity between the programs. Enhanced collaboration and partnerships with other MUSC telemedicine programs through recurring meetings and sharing research products and ideas.
- Program investigator Dr. Andrew Goodwin granted highly competitive early career development award as part of the SCTR KL2 scholars program. Dr. Goodwin’s project: “Racial Disparities in Sepsis: The Role of Immunologic Heterogeneity” explored previously described racial differences in sepsis incidence and outcomes.
- Designed a conceptual model for investigating inter-hospital transfer patterns and care transitions for critically ill patients
- Developed a de-identified database and performed a descriptive analysis of the 2010 data.
- January 2014: received a \$1.4 million grant from the Duke Endowment for multi-year project sustainability.
- November 2012: received \$50,000 award from the SC Clinical & Translational Research Institute.

Lean Team Initiative

- Collected and analyzed baseline assessments of 806 JROTC research participants (788 students, 17 instructors) from 11 CCSD high schools and 506 (489 students, 17 instructors) second measurements from four of the schools
- Conducted and analyzed 7 Focus Group sessions with instructors and students; and conducted Exit interviews/surveys of instructors
- Found that a high percentage (44%) of students and instructors (67%) were overweight/obese and failed to consume recommended amounts of fruits and vegetables (93%), drank too many sugared beverages (96%) and viewed too much screen time (83%).
- Found through analysis of BMI and % Body Fat data of baseline student surveys that reliability of BMI

in teens may decrease between the 75th and 90th percentiles

- Facilitated 11 study high schools to monitor student and staff fitness by providing BMI and Body Fat equipment, training and resources, and recommendations on measuring weight status of adolescents.
- Found that one simple hindrance to teen girls engaging in regular vigorous exercise could be remedied by providing quality and properly fitted sports bras
- Found that instructors and students desired additional nutrition education in the classroom
- Found that instructors desired additional training in nutrition education

Community Engaged Scholars Initiative (CES)

CES has developed several cross-project synergies that include the following:

- Working with Bamberg School districts 1 and 2 to promote wellness in the schools on Request for Proposals that would provide staff support and monetary incentives to implement school wellness checklist that the Boeing Center for Children's Wellness has successfully implemented in other school districts.
- Working closely with the health promotion coordinator at SCDHEC to implement healthy eating/active living initiatives in more rural parts of the state.

Mobile Outreach Van, Educational and Navigation Health Services for Underserved Populations (MOVENUP)

- **Task 1. Provide Mobile Health Unit (MHU) Services and Patient Navigation Services**
Table 12 summarizes the demographic characteristics of screened cancer patients during the period of performance for SEVIEW.

Table 12. Demographic Characteristics of Screened Breast, Cervical and Prostate Cancer Patients

Location	Screening Type	Date	AGE	RACE	RESULT	NAVIGATION NEEDED
Charleston	Cervical	7/21/2011	*	AA	Normal	No
Charleston	Cervical	7/21/2011	*	AA	Normal	No
Charleston	Cervical	7/21/2011	*	AA	Normal	No
Charleston	Cervical	7/21/2011	*	AA	Normal	No
Charleston	Cervical	7/21/2011	*	AA	Normal	No
Charleston	Cervical	7/21/2011	*	AA	Normal	No
Charleston	Cervical	7/21/2011	*	AA	Normal	No
Charleston	Cervical	7/21/2011	*	AA	Normal	No
Charleston	Prostate	9/17/2011	40	AA	Normal	No
Charleston	Prostate	9/17/2011	56	W	Normal	No
Charleston	Prostate	9/17/2011	57	AA	Normal	No
Charleston	Prostate	9/17/2011	78	AA	Normal	No
Charleston	Prostate	9/17/2011	52	AA	Normal	No
Charleston	Prostate	9/17/2011	56	H	Normal	No
Georgetown	Prostate	11/4/2011	45	AA	Normal	No
Location	Screening Type	Date	AGE	RACE	RESULT	NAVIGATION NEEDED
Georgetown	Prostate	11/4/2011	47	AA	Normal	No
Georgetown	Prostate	11/4/2011	46	AA	Normal	No

Georgetown	Prostate	11/4/2011	55	AA	Normal	No
Georgetown	Prostate	11/4/2011	49	AA	Normal	No
Georgetown	Prostate	11/4/2011	54	AA	Normal	No
Georgetown	Prostate	11/4/2011	49	AA	Normal	No
Georgetown	Prostate	11/4/2011	68	AA	Normal	No
Georgetown	Prostate	11/4/2011	53	AA	Normal	No
Georgetown	Prostate	11/4/2011	61	AA	Normal	No
Georgetown	Prostate	11/4/2011	56	AA	Normal	No
Georgetown	Prostate	11/4/2011	56	AA	Normal	No
Georgetown	Prostate	11/4/2011	66	AA	Normal	No
Georgetown	Prostate	11/4/2011	48	AA	Normal	No
Georgetown	Prostate	11/4/2011	42	AA	Normal	No
Georgetown	Prostate	11/4/2011	53	AA	Normal	No
Georgetown	Prostate	11/4/2011	41	AA	Normal	No
Georgetown	Prostate	11/4/2011	56	AA	Normal	No
Georgetown	Prostate	11/4/2011	56	AA	Normal	No
Georgetown	Prostate	11/4/2011	45	AA	Normal	No
Darlington/Society Hill/Hartsville/Lamar	Prostate	10/12/2011	40	AA	Normal	No
Darlington/Society Hill/Hartsville/Lamar	Prostate	10/12/2011	59	AA	Normal	No
Darlington/Society Hill/Hartsville/Lamar	Prostate	10/12/2011	47	AA	Normal	No
Darlington/Society Hill/Hartsville/Lamar	Prostate	10/12/2011	61	AA	Normal	No
Darlington/Society Hill/Hartsville/Lamar	Prostate	10/12/2011	45	AA	Normal	No
Darlington/Society Hill/Hartsville/Lamar	Prostate	10/12/2011	49	AA	Normal	No
Darlington/Society Hill/Hartsville/Lamar	Prostate	10/12/2011	54	W	Normal	No
Darlington/Society Hill/Hartsville/Lamar	Prostate	10/12/2011	46	AA	Normal	No
Darlington/Society Hill/Hartsville/Lamar	Prostate	10/12/2011	53	AA	Normal	No
Darlington/Society Hill/Hartsville/Lamar	Prostate	10/12/2011	60	AA	Normal	No
Darlington/Society Hill/Hartsville/Lamar	Prostate	10/12/2011	50	W	Normal	No
Darlington/Society Hill/Hartsville/Lamar	Prostate	10/12/2011	53	W	Normal	No
Darlington/Society Hill/Hartsville/Lamar	Prostate	10/12/2011	52	AA	Normal	No
Darlington/Society Hill/Hartsville/Lamar	Prostate	10/12/2011	53	AA	Normal	No
Location	Screening Type	Date	AGE	RACE	RESULT	NAVIGATION NEEDED
Darlington/Society Hill/Hartsville/Lamar	Prostate	10/12/2011	55	AA	Normal	No

Darlington/Society Hill/Hartsville/Lamar	Prostate	10/14/2011	51	AA	Normal	No
Darlington/Society Hill/Hartsville/Lamar	Prostate	10/14/2011	70	W	Normal	No
Darlington/Society Hill/Hartsville/Lamar	Prostate	10/14/2011	63	W	Normal	No
Darlington/Society Hill/Hartsville/Lamar	Prostate	10/14/2011	52	AA	Normal	No
Darlington/Society Hill/Hartsville/Lamar	Prostate	10/14/2011	52	W	Normal	No
Darlington/Society Hill/Hartsville/Lamar	Prostate	10/14/2011	62	AA	Normal	No
Darlington/Society Hill/Hartsville/Lamar	Prostate	10/14/2011	61	AA	Normal	No
Darlington/Society Hill/Hartsville/Lamar	Prostate	10/14/2011	59	W	Normal	No
Darlington/Society Hill/Hartsville/Lamar	Prostate	10/14/2011	69	W	Normal	No
Darlington/Society Hill/Hartsville/Lamar	Prostate	10/14/2011	55	W	Normal	No
Kingtree	Breast	1/31/2012	46	AA	Normal	No
Kingtree	Breast	1/31/2012	43	AA	Normal	No
Kingtree	Breast	1/31/2012	41	AA	Normal	No
Kingtree	Breast	1/31/2012	45	EA	Normal	No
Kingtree	Breast	1/31/2012	43	AA	Normal	No
Kingtree	Breast	1/31/2012	45	AA	Abnormal	Yes
Kingtree	Breast	1/31/2012	44	AA	Normal	No
Kingtree	Breast	1/31/2012	41	AA	Normal	No
Kingtree	Breast	1/31/2012	42	AA	Normal	No
Kingtree	Breast	1/31/2012	50	AA	Abnormal	Yes
Kingtree	Breast	1/31/2012	41	EA	Normal	Yes
Kingtree	Breast	1/31/2012	42	H/L	Normal	No
Kingtree	Breast	1/31/2012	45	AA	Abnormal	Yes
Kingtree	Breast	1/31/2012	45	AA	Normal	No
Kingtree	Breast	1/31/2012	44	AA	Abnormal	Yes
Yemassee	Cervical	4/5/2012	42	AA	Normal	No
Yemassee	Cervical	4/5/2012	46	AA	Normal	No
Yemassee	Cervical	4/5/2012	48	AA	Normal	No
Yemassee	Cervical	4/5/2012	51	AA	Normal	No
Yemassee	Cervical	4/5/2012	53	W	Normal	No
Yemassee	Cervical	4/5/2012	54	AA	Normal	No
Yemassee	Cervical	4/5/2012	61	AA	Normal	No
Kingtree	Cervical	10/9/2012	41	AA	Normal	No
Kingtree	Cervical	10/9/2012	42	AA	Normal	No
Location	Screening Type	Date	AGE	RACE	RESULT	NAVIGATION NEEDED
Kingtree	Cervical	10/9/2012	42	W	Normal	No

Kingstree	Cervical	10/9/2012	43	AA	Normal	No
Kingstree	Cervical	10/9/2012	45	AA	Normal	No
Kingstree	Cervical	10/9/2012	45	AA	Abnormal	Yes
Kingstree	Cervical	10/9/2012	46	W	Normal	No
Kingstree	Cervical	10/9/2012	46	AA	Abnormal	Yes
Kingstree	Cervical	10/9/2012	50	AA	Abnormal	Yes
Kingstree	Cervical	10/9/2012	54	AA	Normal	No
Kingstree	Cervical	10/9/2012	54	AA	Abnormal	Yes
Kingstree	Cervical	10/9/2012	59	AA	Normal	No
Bluffton	Breast	1/31/2013	34	H	Normal	No
Bluffton	Breast	1/31/2013	40	H	Normal	No
Bluffton	Breast	1/31/2013	40	H	Normal	No
Bluffton	Breast	1/31/2013	41	W	Abnormal	Yes
Bluffton	Breast	1/31/2013	42	W	Abnormal	Yes
Bluffton	Breast	1/31/2013	45	W	Normal	No
Bluffton	Breast	1/31/2013	45	W	Abnormal	Yes
Bluffton	Breast	1/31/2013	49	H	Abnormal	Yes
Bluffton	Breast	1/31/2013	51	W	Normal	No
Bluffton	Breast	1/31/2013	51	H	Normal	No
Bluffton	Breast	1/31/2013	53	W	Normal	No
Bluffton	Breast	1/31/2013	54	W	Normal	No
Bluffton	Breast	1/31/2013	56	W	Normal	No
Bluffton	Breast	1/31/2013	59	W	Normal	No
Bluffton	Breast	1/31/2013	61	W	Normal	No
Bluffton	Breast	1/31/2013	58	W	Normal	No
Bluffton	Breast	1/31/2013	63	W	Abnormal	Yes
Charleston	Breast	2/23/2013	40	AA	Normal	No
Charleston	Breast	2/23/2013	40	AA	Abnormal	Yes
Charleston	Breast	2/23/2013	47	AA	Normal	No
Charleston	Breast	2/23/2013	48	AA	Normal	No
Charleston	Breast	2/23/2013	50	W	Abnormal	Yes
Charleston	Breast	2/23/2013	51	AA	Normal	No
Charleston	Breast	2/23/2013	54	AA	Abnormal	Yes
Charleston	Breast	2/23/2013	56	AA	Normal	No
Charleston	Prostate	2/23/2013	54	AA	Normal	No
Charleston	Prostate	2/23/2013	59	AA	Normal	No
Barnwell	Prostate	3/16/2013	81	W	Normal	No
Barnwell	Prostate	3/16/2013	58	W	Normal	No
Barnwell	Prostate	3/16/2013	66	AA	Normal	No
Walterboro	Breast	3/20/2013	43	W	Normal	No
Walterboro	Breast	3/20/2013	45	W	Normal	No
Walterboro	Breast	3/20/2013	45	AA	Normal	No
Walterboro	Breast	3/20/2013	48	AA	Abnormal	Yes
Walterboro	Breast	3/20/2013	50	W	Abnormal	Yes
Location	Screening Type	Date	AGE	RACE	RESULT	NAVIGATION NEEDED
Walterboro	Breast	3/20/2013	50	AA	Normal	No

Walterboro	Breast	3/20/2013	51	AA	Abnormal	Yes
Walterboro	Breast	3/20/2013	53	AA	Normal	No
Walterboro	Breast	3/20/2013	56	AA	Normal	No
Walterboro	Breast	3/20/2013	57	AA	Normal	No
Walterboro	Breast	3/20/2013	59	W	Abnormal	Yes
Walterboro	Breast	3/20/2013	60	AA	Normal	No
Walterboro	Breast	3/20/2013	62	W	Abnormal	Yes
Walterboro	Breast	3/20/2013	62	W	Normal	No
Walterboro	Breast	3/20/2013	63	AA	Normal	No
Walterboro	Breast	3/20/2013	63	AA	Normal	No
Walterboro	Breast	3/20/2013	64	AA	Normal	No
Summerville	Breast	4/10/2013	47	W	Normal	No
Summerville	Breast	4/10/2013	49	AA	Normal	No
Summerville	Breast	4/10/2013	55	W	Abnormal	Yes
Summerville	Breast	4/10/2013	53	AA	Abnormal	Yes
Summerville	Breast	4/10/2013	58	W	Abnormal	Yes
Summerville	Breast	4/10/2013	52	AA	Normal	No
Summerville	Breast	4/10/2013	62	W	Abnormal	Yes
Summerville	Breast	4/10/2013	65	AA	Normal	No
Summerville	Breast	4/10/2013	61	W	Normal	No
Yemassee	Breast	4/19/2013	58	W	Normal	No
Yemassee	Breast	4/19/2013	52	AA	Normal	No
Yemassee	Breast	4/19/2013	49	AA	Normal	No
Yemassee	Breast	4/19/2013	51	AA	Normal	No
Yemassee	Breast	4/19/2013	48	AA	Normal	No
Yemassee	Breast	4/19/2013	63	W	Abnormal	Yes
Yemassee	Breast	4/19/2013	51	W	Normal	No
Yemassee	Breast	4/19/2013	50	W	Abnormal	Yes
Yemassee	Breast	4/19/2013	49	AA	Normal	No
Yemassee	Breast	4/19/2013	50	AA	Normal	No
Yemassee	Breast	4/19/2013	44	UNK	Normal	No
Yemassee	Breast	4/19/2013	45	NA	Normal	No
Yemassee	Breast	4/19/2013	46	W	Abnormal	Yes
Dorchester	Prostate	5/28/2013	57	AA	Normal	No
Dorchester	Prostate	5/28/2013	55	AA	Normal	No
Dorchester	Prostate	5/28/2013	57	AA	Normal	No
Dorchester	Prostate	5/28/2013	50	AA	Normal	No
Dorchester	Prostate	5/28/2013	57	AA	Normal	No
Dorchester	Prostate	5/28/2013	58	AA	Normal	No
Dorchester	Prostate	5/28/2013	53	AA	Normal	No
Dorchester	Prostate	5/28/2013	64	AA	Normal	No
Dorchester	Prostate	5/28/2013	48	AA	Normal	No
Dorchester	Prostate	5/28/2013	58	AA	Normal	No
Dorchester	Prostate	5/28/2013	63	AA	Normal	No
Location	Screening Type	Date	AGE	RACE	RESULT	NAVIGATION NEEDED
Dorchester	Prostate	5/28/2013	57	AA	Normal	No

Dorchester	Prostate	5/28/2013	54	AA	Normal	No
Dorchester	Prostate	5/28/2013	55	AA	Abnormal	Yes
Georgetown	Prostate	5/21/2013	48	AA	Normal	No
Georgetown	Prostate	5/21/2013	50	AA	Normal	No
Georgetown	Prostate	5/21/2013	54	AA	Normal	No
Georgetown	Prostate	5/21/2013	53	AA	Normal	No
Georgetown	Prostate	5/21/2013	55	AA	Abnormal	Yes
Georgetown	Prostate	5/21/2013	55	AA	Normal	No
Georgetown	Prostate	5/21/2013	57	AA	Normal	No
Georgetown	Prostate	5/21/2013	57	AA	Normal	No
Georgetown	Prostate	5/21/2013	57	AA	Normal	No
Georgetown	Prostate	5/21/2013	57	AA	Normal	No
Georgetown	Prostate	5/21/2013	58	AA	Normal	No
Georgetown	Prostate	5/21/2013	58	AA	Normal	No
Georgetown	Prostate	5/21/2013	63	AA	Normal	No
Georgetown	Prostate	5/21/2013	64	AA	Normal	No
Dorchester	Breast	8/2013-09/2013	47	H	Abnormal	Yes
Charleston/ Dorchester	Breast	8/2013-09/2013	46	AA	Abnormal	Yes
Charleston/ Dorchester	Breast	8/2013-09/2013	63	W	Abnormal	Yes
Charleston/ Dorchester	Breast	8/2013-09/2013	46	W	Abnormal	Yes
Charleston/ Dorchester	Breast	8/2013-09/2013	52	W	Abnormal	Yes
Charleston/ Dorchester	Breast	8/2013-09/2013	60	W	Abnormal	Yes
Charleston/ Dorchester	Breast	8/2013-09/2013	60	AA	Abnormal	Yes
Charleston/ Dorchester	Breast	8/2013-09/2013	61	H	Abnormal	Yes
Charleston/ Dorchester	Breast	8/2013-09/2013	43	AA	Abnormal	Yes
Charleston/ Dorchester	Breast	8/2013-09/2013	63	AA	Abnormal	Yes
Charleston/ Dorchester	Breast	8/2013-09/2013	44	W	Normal	No
Charleston/ Dorchester	Breast	8/2013-09/2013	41	AA	Normal	No
Charleston/ Dorchester	Breast	8/2013-09/2013	58	W	Normal	No
Charleston/ Dorchester	Breast	8/2013-09/2013	42	AA	Normal	No
Charleston/ Dorchester	Breast	8/2013-09/2013	62	W	Normal	No
Charleston/ Dorchester	Breast	8/2013-09/2013	65	OTHER	Normal	No
Location	Screening Type	Date	AGE	RACE	RESULT	NAVIGATION NEEDED
Charleston/ Dorchester	Breast	8/2013-09/2013	60	W	Normal	No

Dorchester						
Charleston/ Dorchester	Breast	8/2013-09/2013	49	OTHER	Normal	No
Charleston/ Dorchester	Breast	8/2013-09/2013	59	W	Normal	No
Charleston/ Dorchester	Breast	8/2013-09/2013	55	AA	Normal	No
Charleston/ Dorchester	Breast	8/2013-09/2013	53	W	Normal	No
Charleston/ Dorchester	Breast	8/2013-09/2013	51	AA	Normal	No
Charleston/ Dorchester	Breast	8/2013-09/2013	60	AA	Normal	No
Charleston/ Dorchester	Breast	8/2013-09/2013	57	W	Normal	No
Charleston/ Dorchester	Breast	8/2013-09/2013	63	AA	Normal	No
Charleston/ Dorchester	Breast	8/2013-09/2013	50	AA	Normal	No
Charleston/ Dorchester	Breast	8/2013-09/2013	58	AA	Normal	No
Charleston/ Dorchester	Breast	8/2013-09/2013	61	W	Normal	No
Charleston/ Dorchester	Breast	8/2013-09/2013	48	W	Normal	No
Charleston/ Dorchester	Breast	8/2013-09/2013	49	W	Normal	No
Charleston/ Dorchester	Breast	8/2013-09/2013	59	W	Normal	No
Charleston/ Dorchester	Breast	8/2013-09/2013	60	AA	Normal	No
Charleston/ Dorchester	Breast	8/2013-09/2013	56	OTHER	Normal	No
Charleston/ Dorchester	Breast	8/2013-09/2013	52	W	Normal	No
Charleston/ Dorchester	Breast	8/2013-09/2013	44	W	Normal	No
Charleston/ Dorchester	Breast	8/2013-09/2013	61	AA	Normal	No
Charleston/ Dorchester	Breast	8/2013-09/2013	43	H	Normal	No
Charleston/ Dorchester	Breast	8/2013-09/2013	43	AA	Normal	No
Charleston/ Dorchester	Breast	8/2013-09/2013	50	AA	Normal	No
Charleston/ Dorchester	Breast	8/2013-09/2013	41	W	Normal	No

*Missing data on this item

**All patients with abnormal results were provided navigational services for diagnostic follow-up.

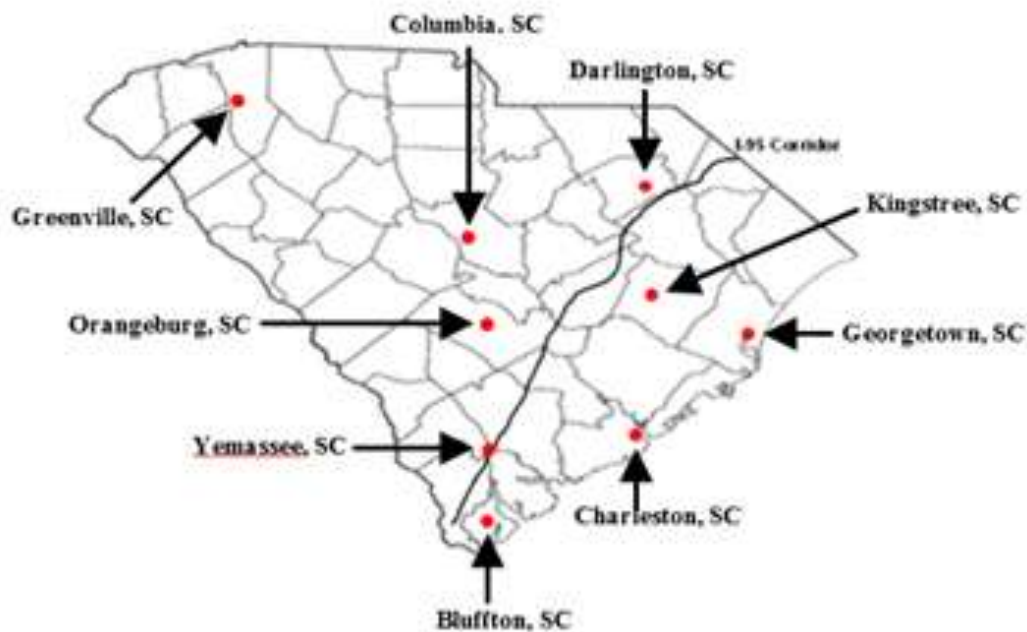
*** Race Categories: White (W); African American (AA); Hispanic (H); Native American (NA); and Unknown (UNK)

****Additional Screenings not captured in **Table 12** above:

- 1) Darlington County (Darlington, Society Hill and Hartsville, SC) – 48 breast cancer screenings in October 2010
- 2) Darlington County (Hartsville and Lamar, SC) – 26 prostate cancer screening in October 2010
- 3) Yemassee, SC – 13 breast cancer screenings on 12/3/2010
- 4) Yemassee, SC – 8 prostate cancer screenings on 12/4/2010
- 5) Darlington County (Darlington, Society Hill, Hartsville, and Lamar, SC) – 63 breast cancer screening in October 2011

Figure 11. Illustrates the locations of cancer screenings.

Figure 11. Cancer Screening Locations



- **Task 2. Provide cancer education awareness and education related to nutrition/physical activity to the identified I-95 Corridor counties**
 - We implemented a community based cancer education program focusing on the role of nutrition and physical activity in cancer prevention, improved cancer treatment outcomes, and prevention of cancer recurrence.
 - The program developed out of a partnership between the MUSC Hollings Cancer Center and local civic, faith-based and fraternal organizations. The initial focus was on prostate and breast cancer, but was expanded to address the role of nutrition and physical activity, which transcended each type of cancer and broadened the program's focus.
 - MOVENUP partnered with the Goose Creek Branch of the National Association for the Advancement of Colored People (NAACP) to participate in the Health Fair Services component of the Third Annual Goose Creek Unity Day at Goose Creek High School, Goose Creek, SC.
 - Cancer education and awareness programs are a primary focus of our community outreach program activities in the I-95 Corridor. The map above shows the counties in South Carolina

where MOVENUP has conducted cancer education training programs, with the majority of counties clustered in or near the I-95 Corridor.

- The MOVENUP team formed a partnership with the University of South Carolina (USC) Institute for Partnerships to Eliminate Health Disparities (IPEHD), Community Engagement and Outreach Core (CEOC) and the Town of Santee, SC in Orangeburg County in the I-95 Corridor to host a community-based, cancer education training program in the Santee Convention Center. The Santee region is rural with a primarily agricultural economy typical of Orangeburg County.
- Our partnership with the IPEHD was appropriate because we share a similar mission, to eliminate health disparities through community, academic and other strategic partnerships in South Carolina and beyond. The IPEHD was created to allow the university to enhance its public and private partnerships. These partnerships provide the opportunity for the pursuit of inter-institutional, multi-disciplinary research, education, and training to address health disparities.
- The Cancer Education Guide (CEG) Facilitator Training Program (**Table 13**) employs a Train-the-Trainer approach in which each intervention participant signs a contract agreeing to conduct 2 training sessions in his or her own community in the coming year. The information disseminated during the training program (i.e., “the intervention”) consists of a 4-hour evidence-based cancer education program in which a 3-hour component focuses on general cancer information, a 30-minute component highlights prostate cancer information, and a 30-minute component focuses on cancer clinical trials information. The SC Cancer Alliance (SCCA) developed the cancer knowledge component of the intervention for general audiences with no expert knowledge about cancer. The American Cancer Society developed the prostate cancer knowledge component for lay audiences. The cancer clinical trials information component was based on a 30-minute PowerPoint presentation that is available on the National Institutes of Health (NIH)/National Cancer Institute (NCI) website.

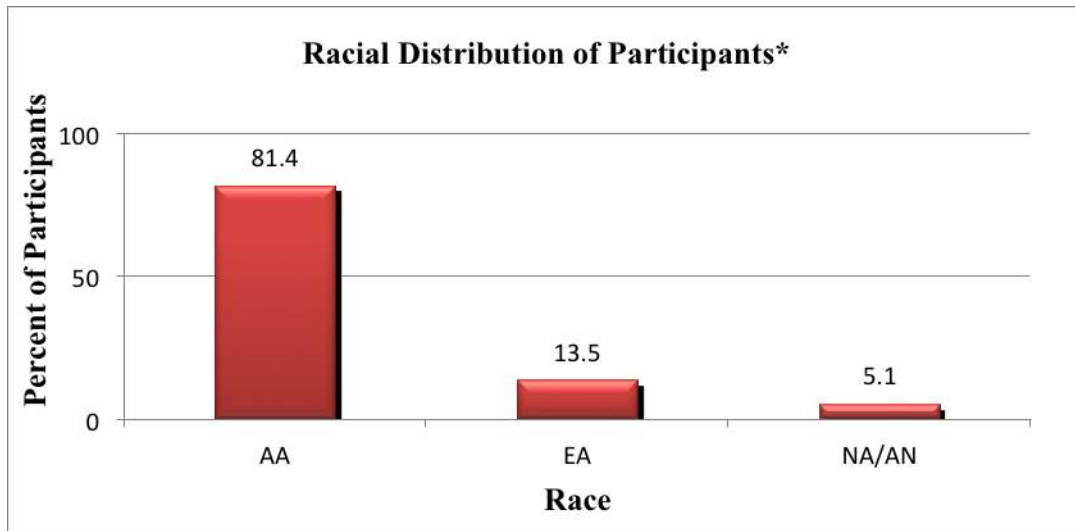
Table 13. Cancer Education Guide (CEG) Facilitator Training Program Dates and Locations

Date	County	City	Location
2/27/2010	Bamberg	Denmark	Voorhees College
3/27/2010	Florence	Florence	Carolinas Hospital System
10/30/2010	Hampton	Yemassee	Town Hall
6/25/2011	Darlington	Darlington	Macedonia Baptist Church
9/17/2011	Orangeburg	Santee	Santee Convention Center
2/13/2012	Georgetown, Williamsburg	Georgetown	Georgetown Memorial Hospital
6/30/2012	Charleston	Charleston	Hollings Cancer Center
3/08/2013	Georgetown	Georgetown	Community Center
5/17/2013	Williamsburg	Kingstree	Community Center

- Since its inception, the cancer education program has been conducted with 315 participants from counties in South Carolina with high racial disparities in cancer mortality rates, primarily located along the I-95 Corridor. Listed below are the demographic characteristics of these participants. See **Fig. 12** for the racial distribution of participants.
 - Gender* (n=211)
 - Majority of the study participants were female (84.8%)
 - Race* (n=296)
 - Most participants were African American (81.4%)

- Compared to the state population of 0.5% Native American/ Alaskan Native (NA/AN), our study included a significant population of NA/AN (5.1%)
- Education (n=298)
 - More than half of the study participants had at least a college degree (77.9%)
- Income* (n=286)
 - Slightly more than half had an annual household income equal to or greater than \$40,000 (53.1%)

Figure 12. Racial Distribution of Participants



*= missing data

- As reported to the investigators during follow-up telephone calls with the study participants, 40 of the trained participants/lay facilitators have conducted 104 sessions, reaching 3,292 community members, although data on socio-demographic characteristics or program outcomes are not available for these individuals.
- More information on the cancer education and awareness training approach are detailed in these peer-reviewed publications:
 - “Assessing an Intervention to Improve Clinical Trial Perceptions Among Predominately African-American Communities in South Carolina ”
 - “Evaluating an intervention to increase cancer knowledge in racially diverse communities in South Carolina.”
 - “Unequal Burden of Disease, Unequal Participation in Clinical Trials: Solutions from African American and Latino Community Members” - describes further work that was conducted by the investigators to understand the attitudes and perceptions of diverse community members toward participation in clinical trials. Published in 2013.
- **Task 3. Develop a cancer research training program with students from the following Historically Black Colleges and Universities (HBCUs): Claflin University, South Carolina State University, and Voorhees College**
 - Goal is to recruit the next generation of prostate cancer researchers by exposing undergraduate students (“Student Fellows”) from Claflin University (CU), South Carolina State University (SCSU), and Voorhees College (VC) to breast and prostate cancer research at the MUSC, and training them to participate in such research activities. Basic science and clinical researchers are needed to aggressively pursue and test better methods to decode the prostate cancer fingerprints, which hold the key to understanding the relationship between gene expression and future prognosis. Population science researchers are needed who will identify barriers and facilitators of

prostate cancer early detection and treatment, and develop strategies to overcome them. The Training Program provided a pipeline for future generations of these prostate cancer researchers.

- Training Program consists of a 10-week research training curriculum in which Student Fellows learn fundamentals of biomedical research and a simultaneous 10-week prostate and breast cancer research training curriculum in which they learn the continuum of prostate and breast cancer research, from bench to bedside to community.
- Twenty-two students participated in the summer undergraduate breast and prostate research program between 2010 and 2013. **Table 14** lists the accomplishments of each of the students:

Table 14. Participant Accomplishments

Student Name	Summer Research Project	Publications, Presentations & Honors
Mr. Jonathan Brown Claflin University	Mentor: Danyelle Townsend, Ph.D. Research Projects: 2010: NOV-002 Induces S-Glutathionylation of Serpin A1 and A3 in Human Plasma 2011: GSTpi catalyzes S-glutathionylation of Serpins A1 and A3 in plasma	Publications: No publications to date Presentations: 2010 MUSC Summer Undergraduate Research Program 2011 IMPaCT Conference Poster Presentation 2011 Annual Biomedical Research Conference for Minority Students (ABRCMS) Honors: 2011 Scholarship Recipient, 5 th Annual National Conference on Health Disparities
Mr. De'Angelo Dinkins SC State University	Mentor: Christina Voelkel-Johnson, Ph.D. Research Projects: Redox Protein Expression and Susceptibility to Therapeutic Intervention in Arcap Prostate Cancer Cells	Publications: No publications to date Presentations: 2010 MUSC Summer Undergraduate Research Program
Ms. Ebonie Fuller SC State University	Mentor: Marvella E. Ford, Ph.D. Research Project: Evaluating an Intervention to Improve Perceptions of Cancer Clinical Trials among Racially Diverse Communities in South Carolina	Publication: Manuscript entitled "Evaluating an Intervention to Improve Clinical Trial Perceptions among Racially Diverse Communities in South Carolina" is under peer review. Presentations: 2010 MUSC Summer Undergraduate Research Program 2010 MUSC Student Research Day Oral Presentation 2011 IMPaCT Conference Poster Presentation
Mr. Jonathan Brown Claflin University	Mentor: Danyelle Townsend, Ph.D. Research Projects: GSTpi catalyzes S-glutathionylation of Serpins A1 and A3 in plasma	Publications: No publications to date Presentations: 2010 MUSC Summer Undergraduate Research Program 2011 IMPaCT Conference Poster Presentation 2011 Annual Biomedical Research Conference for Minority Students (ABRCMS) Honors: 2011 Scholarship Recipient, 5 th Annual National Conference on Health Disparities
Ms. Jazzmine Clemons Claflin University	Mentor: Shikhar Mehrotra, Ph.D. Research Project: T Cell Immunotherapy	Publications: No publications to date Presentations: 2011 MUSC Summer Undergraduate Research Program
Mr. Kendrick Henderson Claflin University	Mentor: Sebastino Gattoni-Celli, M.D. Research Project: The role of vitamin D and parathyroid hormone in African Americans and Caucasians with early stage prostate cancer	Publications: No publications to date Presentations: 2011 MUSC Summer Undergraduate Research Program Honors: 2011 Scholarship Recipient, 5 th Annual National Conference on Health Disparities
Ms. Claudia Thompson SC State University	Mentor: Harry Clarke, M.D. Research Project: Prostate cancer and testosterone therapy replacement	Publications: No publications to date Presentation: 2011 MUSC Summer Undergraduate Research Program
Student Name	Summer Research Project	Publications, Presentations & Honors

Mr. De'Angelo Dinkins SC State University	Mentor: Dr. Christina Voelkel-Johnson Research Project: Susceptibility of ARCaPm to PX-12 and Taxotere	Publications: No publications to date Presentations: 2011 MUSC Summer Undergraduate Research Program 2011 IMPaCT Conference Poster Presentation Honors: 2011 Scholarship Recipient, 5 th Annual National Conference on Health Disparities
Ms. Co-Danielle Green SC State University	Mentor: Dr. Marvella E. Ford Research Project: Improving Cancer Knowledge in South Carolina	Publications: No publications to date Presentations: 2011 MUSC Summer Undergraduate Research Program 2011 IMPaCT Conference Poster Presentation Honors: 2011 Scholarship Recipient, 5 th Annual National Conference on Health Disparities
Ms. Sierra Brooks Voorhees College	Mentor: Dr. Dave Turner Research Project: DNA base pair mutation caused by glycation are repaired by the MBD4 DNA repair	Publications: No publications to date Presentation: 2012 MUSC Summer Undergraduate Research Program
Ms. Sylvia Bridges Junior SC State University	Mentor: Dr. Victoria Findlay Research Project: The Effects of MiRNA on Prostate Cancer	Publication: No publications to date Presentation: 2012 MUSC Summer Undergraduate Research Program
Ms. Myshayla Bell Sophomore Claflin University	Mentor: Dr. Shikhar Mehrotra Research Project: Overexpression of an Antigen in Melanoma Tumors and the Surrounding T Regulatory Cells using Immunohistochemistry	Publication: No publications to date Presentation: 2012 MUSC Summer Undergraduate Research Program
Ms. Claudia Thompson -Senior SC State University	Mentor: Dr. Danyelle Townsend Research Project: The Effects of PDI Inhibitors on S-Glutathionylation in Prostate Cancer Cells	Publication: No publications to date Presentation: 2012 MUSC Summer Undergraduate Research Program
Ms. Laila Green Sophomore Claflin University	Mentor: Dr. Marvella E. Ford Research Project: Improving Perceptions of Cancer Clinical Trials in SC	Publication: No publications to date Presentation: 2012 MUSC Summer Undergraduate Research Program
Ms. Britney White Senior Claflin University	Mentor: Dr. Patrick Woster Research Project: Cancer Epigenetics: Using MTS Assays to determine cytotoxicity in drugs containing LSD1 and DNA methylation inhibitors	Publication: No publications to date Presentation: -2012 MUSC Summer Undergraduate Research Program -Two presentations: -2013 July Oral Presentation at Claflin University Summer Symposium -2014 Feb. Oral Presentation at ERN Emerging Researchers National Conference in STEM Washington DC. Won second place for her oral presentation.
Ms. Jasmine Fox SC State University	Mentor: Dr. Victoria Findlay Research Project: MiR-204 Negative Regulation of IGF2R as a Mechanism Driving Breast Cancer Disparity	Publication: No publications to date Presentation: 2013 MUSC Summer Undergraduate Research Program
Ms. Sadia Robinson SC State University	Mentor: Dr. Dave Turner Research Project: Examining the AGE-RAGE Signaling Axis as a Mechanism of Prostate Cancer Disparity	Publication: No publications to date Presentation: 2013 MUSC Summer Undergraduate Research Program
Ms. Tomesha Nesbitt Voorhees College	Mentor: Dr. Shikhar Mehrotra Research Project: The Effect of Vitamin D3 on T cell Activation and Death	Publication: No publications to date Presentation: 2013 MUSC Summer Undergraduate Research Program
Ms. Keira Addison SC State University	Mentor: Dr. Danyelle Townsend Research Project: Redox Signaling is deregulated in Breast Cancer	Publication: No publications to date Presentation: 2013 MUSC Summer Undergraduate Research Program
Student Name	Summer Research Project	Publications, Presentations & Honors

Ms. Franshawn Mack SC State University	Mentor: Dr. Marvella E. Ford Research Project: Evaluating the Reliability of an Instrument Assessing Cancer Clinical Trial Perceptions in a Predominantly African American Sample in South Carolina	Publication: No publications to date Presentation: 2013 MUSC Summer Undergraduate Research Program Southeast Regional Research Conference in Little Rock, Arkansas on November 15-17, 2013 (oral presentation)
Ms. Bobbie Blake Claflin University	Mentor: Dr. Jennifer Wu Research Project: NKG2D Signaling Pathways Analysis	Publication: No publications to date Presentation: 2013 MUSC Summer Undergraduate Research Program
Ms. Evelyn Martinez SC State University	Mentor: Dr. Rosenzweig Research Project: Growth Factor Contribution to Epithelial Mesenchymal Transition	Publication: No publications to date Presentation: 2013 MUSC Summer Undergraduate Research Program

- Through personal and institutional initiative on the part of CU, SCSU, and VC, a regional gain has been made in capacity to conduct prostate and breast cancer research in South Carolina, which leads the nation in prostate cancer disparities. The Training Program will lead to the following outcomes: (1) Increased number of graduate school applicants, (2) Increased number of graduate school enrollees, (3) Increased number of coauthored peer reviewed cancer disparities manuscripts with Student Fellows, and (4) Increased number of coauthored presentations made at scientific meetings with Student Fellows. The Training Program will impact the Student Fellows' home institutions by providing a pipeline for the Fellows' progression from undergraduate students to graduate students and then to academic researchers. The Training Program will serve as a national model to be replicated throughout the country.
- The MOVENUP Team leveraged funding from another grant to recruit an MUSC graduate student, Mr. Dion Foster to work with Dr. David Turner, an MUSC prostate cancer researcher, during the academic year. Mr. Foster is working with Dr. Turner to conduct experiments related to glycation and DNA repair in prostate cancer tissue. We successfully leveraged funds from a National Institutes of Health/National Cancer Institute grant to pay for Mr. Foster's effort on the Dr. Turner's research project.
- Mr. Foster submitted an abstract for presentation at the American Association for Cancer Research (AACR) Conference on The Science of Cancer Health Disparities in Racial/Ethnic Minorities and the Medically Underserved (October 27-30, 2012). His abstract was selected and he was awarded a Minority Scholar in Cancer Research Award to participate in the AACR Meeting. Ms. Deidre White, a 2012 summer undergraduate research student from SC State University, is listed as a co-author on Mr. Foster's poster. Her summer research project was based on the data provided by Mr. Foster's work, through his mentored research with Dr. Turner.
- Mr. Foster won 2nd place in the Health Disparities category for his poster presentation during the MUSC 2012 Perry V. Halushka Student Research Day. Thus, our mentoring strategy in which Dr. Turner was mentored by Dr. Ford and in turn mentored Mr. Foster, who mentored Ms. White along with Dr. Turner, proved to be successful. Mr. Foster defended his master's thesis and received his master's degree in 2013.
- The MOVENUP team leveraged funding from another grant to recruit Mr. Qi Guo, an MUSC graduate student, working with MUSC breast cancer researcher Dr. Findlay on "MicroRNA Mediated Negative Regulation of Caveolin 1 as a Biological Mechanism Driving Breast Cancer Disparities." He recently defended his master's proposal and has begun to write his thesis.

Health Empowerment Zone

- New partnerships with FamilyCorps, Trident Technical College and Father-to-Father Project were established through collaboration on a grant submitted to the Children's Trust Fund of SC, focused on creating healthier young families. These new partnerships generated new referral mechanisms for young families in North Charleston and expanded the program's reach.
- Sustainable community coalition
- Obesity Summit established action groups to address policy, research, and education
- Update of Community Action Plan

Healthy People in Healthy Communities

- One of the most notable programs introduced was providing competitive community grants so local entities could teach healthy lifestyles and screen/refer for early detection of chronic disease, and working with the medical community to coordinate evidence-based approaches to prevention and treatment of chronic disease. See **Fig. 13**.

Figure 13. Community Grants

Organization/Agency & Title of Grant	DESCRIPTION
Williamsburg Regional Boys to Men Club, Inc. Kingstree, SC "Let's Get Physical"	School District Parent Coordinator. Work w/parents of students @ Greeleyville Elementary; re: nutrition, physical activity, education.
Marion Missionary Baptist Church Salters, SC "Working Together for a Healthier Lifestyle"	Collaborators will work w/children & adults members of church & surrounding community. Health Screenings (lipids, diabetes, hypertension, cancer); education re: nutrition and physical activity; Purchase equipment, * DASH cookbooks, etc.
New Commitment Lane, SC "Fitness Friday"	Mayor of Lane, SC and C.E. Murray HS JROTC Staff will target JROTC students, entire student body & community. Focus on physical activity, nutrition, education and health fairs.
St. Peter Way of the Cross Church Andrews, SC "Parents and Children Exercising Program"	Church family approach. Nutrition, physical activity classes, walk-a-thons, tracking weight loss, health fair (screening/referral), cookbooks, etc.
Hopewell Senior Day Care Center, Inc. Salters, SC D.P. Cooper Elementary School Blakeley, SC "Food and Fun: A Nutritional and Physical Activity Program for Children"	Guidance Counselor, Curriculum Specialist, Principal, Teachers, Parents focus on children. Nutrition, PA, messaging, newsletter, DASH cookbooks, biweekly discussions.
Williamsburg Home Town Chamber Kingstree, SC "Affairs of the Heart"	School District Coordinator. Community summits and health fairs w/students, parents and staff in Hemingway, Greeleyville, Kingstree schools. Nutrition, PA, education, etc.
Friendship United Methodist Church Nesmith, SC "Change Your Life with One Step and One Move Ministry"	Pastor, Church Committees: Church & Society, Disaster Preparedness, Finance, Secretary, WRH Community RN. Members of all ages, gender. Nutrition, PA, health screening, tracking health info, walk-a-thons, health fairs, education, etc.
Parents Anonymous of South Carolina, Inc. North Charleston, SC "Rural Education Accelerating Community Health Initiative Impacting Families"	Coordinator will select 25 families across the county w/focus on nutrition, food preparation, education, PA.
Williamsburg County First Steps to School Readiness Partnership Board Kingstree, SC "Rural Education Accelerating Community Health Initiative Impacting Childcare"	Target audience: Parents, Childcare Providers and children countywide. Healthy food preparations, PA, education/training sessions for Childcare Directors and kitchen staff of 7-8 centers, ~355 children. DASH cookbooks, Connie's Bakery & Specialty Shoppe, WC EMM, etc.
Williamsburg County Disabilities & Special Needs Board Kingstree, SC "Williamsburg County Smoking Cessation Prevention and Health Education Awareness Program"	Partnership with Life Support, Inc., Williamsburg County School District & Parents. Target audience young adults 11-25 yrs. In-house clientele and homebound. In Cades, Kingstree, Hemingway, Greeleyville, Lane, Salters. Education, training, implementation, early intervention.

- A Community Health Advisory Board (CHAB) was established in Williamsburg County, which included key stakeholders who could tailor the program and its implementation to the current needs of the community:
 - Ernest M. Atkinson, MD – Board Member, Live Oak Medical Center
 - Harry W. Floyd, MD, PA – Board Member, Williamsburg Regional Hospital Board
 - B. Lee Jones, MD- Board Member, Andrews Medical Center
 - Jennifer Lamb, RN – Board Member, School District Nurse Coordinator
 - Andrea M. McKnight, PA-C – Board Member (Hope Health Inc).
 - Regina Nesmith, MS – Board Member, DHEC, Region 6, Director Community Health Education

- Karen Segars, RN – Board Member, Williamsburg Regional Hospital Community Outreach
- Provided a school grant to Williamsburg County School District (WCSD) to establish a fitness center for the WCSD faculty and staff.
- Provided community health fairs to raise awareness about healthy living in the community.
- Coordinated a Pastor's Retreat and Workshop.
- DASH Cookbook – the team disseminated the DASH for Good Health Southern Style cookbook to Williamsburg County hospitals, worksites and entities. Organizations have started nutritional classes, hosted food preparation seminars using recipes adapted from the cookbook⁴⁷.

Telemedicine in the Evaluation of Alzheimer's Disease in a Rural, African American Population

- Added additional partner sites to include Abbeville Neurology. Completed all contracting and start-up procedures to add additional partner site. Enabling the project to have, two fully functioning partner sites in rural locations
- Completed the regulatory approval process for the additional partner site.
- Obtained IRB approvals for Abbeville Neurology partner site amendment.
- Completed Collaborative Institutional Training Initiative for Abbeville Neurology staff to participate in human subject's research.
- Trained Abbeville Neurology research team on use of project equipment needed for telemedicine procedures, assessments, and patient recruitment utilizing specific inclusions/exclusion criteria.
- Obtained Federal Wide Assurance for Abbeville Neurology to validate assurance of compliance with federal regulations for the protection of human subjects in research.
- Continued evaluating patients at Andrews Medical Center, began evaluating Abbeville Neurology patients.
- Enrolled first subject and began evaluations via telemedicine.
- Overcame and addressed identified barriers effectively.
- Identified additional participants for enrollment at Andrews Medical Center.
- Completed approximately 68 patient visits with 100% completion of 18 participants involved in both in-person and telemedicine assessments.
- Obtained IRB and budget approvals for descriptive data analysis to occur.

Reportable Outcomes

Southeastern VIEW Administrative Core (SEVAC)

Highlights include:

- Continued collaboration of the experienced management team –the PI, Finance Director, Program Manager, and the Marketing Consultant.
- Continued intensive engagement of key consultants for strategic planning and evaluation.
- Successful implementation of key communication/coordination activities:
 - Calendar of meetings (convenes, manages and documents board and committee meetings).
 - Conference calls, social media networking (Website, Facebook, Twitter, Pinterest, and Google Plus), dissemination of program brochure, and use of the SEVIEW PowerPoint presentation.
 - Collaborated with co-investigator staff in carrying out daily programmatic details.
 - Continued development of the SEVIEW website (<http://www.musc.edu/seview>)⁴⁹ with extensive crosslinks to partners, affiliates, resources and tools; continued development of the SEVIEW Facebook page (<http://www.facebook.com/SEVIEW1>)⁵⁰; launch of the SEVIEW Twitter (<http://twitter.com/#!/SEVIEW1>)⁵¹, Pinterest Account (<http://pinterest.com/seview/>)⁵² and Google Plus account (<https://plus.google.com/113856284520869767628/posts>).⁵³
- Successful implementation of administrative/fiscal activities
 - Establishment and review of accounts, personnel actions, as listed above.

- Meetings with executive agency, institutional, and program officials to prepare and present quarter and ad hoc reports on progress, budgets and other relevant matters.
- Continued to establish 'SEVIEW Action Agreements' with each SEVIEW Initiative Director.
- Developed template for submission of quarterly reports for each initiative to USAMRMC and TATRC
- Provided oversight of the 2010, 2011, 2012, 2013, and 2014 National Conference on Health Disparities
- Continued development of the SEVIEW Evaluation Plan and Logic Model for Phase I and Phase II.

MUSC Public Information and Community Outreach (PICO) Initiative and Community Institutes for Traditional and Nontraditional Leaders

The following lists the results of the PICO programs:

- CLIs: a total of 238 attended the CLIs
- TAWs: a total of 91 attended the TAW
- Seventh Annual National Conference on Health Disparities: a total of 367 in attendance

The following social media outlets were established for PICO:

- Website: <http://pico.library.musc.edu>
- Facebook: www.facebook.com/muscPICO
- Twitter: https://twitter.com/?iid=am71153098513372716814227990&nid=23+sender&uid=385502360&utm_content=profile#!/MUSC_PICO

Our Health Series dialogue entitled, *Our Nation's Health: A Focus on Social Determinants*:

- Videotaped before a live studio audience at ETV in Columbia, SC - May 30, 2013; 50 guests.
- Program was broadcast statewide in SC via ETV on July 18, 2013 at 9 p.m.
- Program was broadcast on ETV's digital affiliate, The South Carolina Channel, on July 24, 2013 at 9 p.m.

Hands on Health-SC:

- Hands on Health-SC staff members (Ms. Nancy McKeehan, Ms. Monique Hill, Mr. Sherman Paggi, and Ms. Maya Hollinshead) participated in 19 exhibits during the year that includes Savannah, GA, Charleston, SC, North Charleston, SC, Columbia, SC, St. Thomas, USVI, Myrtle Beach, SC and Chicago, IL
- Resulted in lay community members requesting additional training. Exhibits fostered opportunity for Hands on Health-SC to conduct in-depth website presentations and instruct individuals on accessing health resources through interactive online interface.
- Exhibits promoted Hands on Health-SC website: www.handsonhealth-sc.org and www.hoh-sc.org.

Health Careers Academy and Junior Faculty Development

- Health Careers Academy
 - Six posters, abstracts, and presentations were developed, facilitated and are available electronically for public review at www.scahec.net
 - Students gained an understanding of the impact of health education through service learning
 - Students increased their knowledge of interdisciplinary nature of the four health professions (dental medicine, medicine, occupational therapy, and pharmacy)
 - Students were connected with faculty, practicing professionals, and health professional students willing to serve as role models
 - Program participants are being tracked to assess matriculation rates
 - Support participated in three MUSC affiliated service learning initiatives
 - A campus-wide collaborative diversity initiative
 - Recommendation: strengthen marketing plan for recruitment
- Junior Faculty Development
 - Debbie C. Bryant, DNP
 - Promoted to Assistant Professor, MUSC College of Nursing
 - Funding Summary

- Robert Wood Johnson Foundation - April 1, 2013 – March 31, 2014
 - Community Compass – A Tri-County Healthy Eating and Active Living Practice Model (HEAL). The purpose of this project is to implement a healthy eating and active living practice model to address obesity and healthy lifestyle behaviors with African American community social, fraternal, and faith-based organizations
 - Role: Principal Investigator
- MD005892, Ford, Esnaola (PI) – April 1, 2012 – December 31, 2016
 - NIH/NCMHD
 - Improving Resection Rates among African Americans with NSCLC
The purpose of this two-arm, cluster-randomized trial is to evaluate the impact of a dynamic, patient navigation intervention in reducing potential barriers to surgical cancer care and improving resection rates among African Americans with early stage non-small cell lung cancer. Study participants will be recruited from six geographically diverse study sites within a statewide Cancer Clinical Trials Network.
 - Role: Co-Investigator
- Avon Foundation for Women – October 1, 2010 – December 31, 2014
 - A "Lay" Patient Navigation Safety Net Program for Minorities and Economically Disadvantaged Women
 - Provides navigation services to remove barriers that prevent timely and complete breast health and treatment services. Takes intensive, proactive approach by utilizing the National Cancer Institute (NCI) "Mammograms not just once, but every year for a lifetime" campaign to assist navigated patients with annual mammography re-screening services.
 - Role: Principal Investigator
- Honor Summary
 - 2012 Robert Wood Johnson Foundation (RWJF) Community Health Leaders Award
 - Bryant featured in the RWJF Scholars, Fellow & Leadership Diversity Marketplace
 - December 2012 - Bryant feature in Ebony.com wellness and empowerment/Health article "Fighting Cancer One Women at a Time"⁴⁶
 - June 21, 2013 Presenter at the 11th Annual Summer Workshop Disparities in Health in America – Working Towards Social Justice
 - Program Chair – Lovell Jones
 - Prairie View A&M University College of Nursing
 - Bryant featured in the Robert Wood Johnson Foundation (RWJF) Scholars, Fellow & Leadership Programs Diversity Marketplace
- Ida J. Spruill, PhD
 - Promoted to Associate Professor, MUSC College of Nursing
 - Elected President of YWCA in Charleston, SC
 - Consumer Representative for FDA, EDAC
 - Manuscripts accepted:
 - Powell-Young YM, **Spruill IJ**. Views of black nurses toward genetic research and testing. *J Nurs Scholarsh* 45(2): 151-9, 2013.
 - Sale, M., Keene, K., Garvey, T, Wein-Min, C., Fernandez, J., **Spruill, I.et.al.** (2012) CARE/SHARE Waist-based Consortium Replications in African Americans. PLoS. PMID: PLoS

- **Spruill, I.** Leite, R, Kamen, D., Fernandes, J, Humt, K.Ford, M., Jenkins, C., Andrews, J. (2012) Two decades of successes, challenges and lessons learned: Community-engaged research with the 'Gullah' population of South Carolina Gateways: International, Journal of Community Research and Engagement

Stroke and Stroke Risk Reduction Initiative (SSRI)

The SSRI Team was successful in producing a number of reportable outcomes during this period, such as manuscripts, abstracts and presentations:

- Association of Academic Health Centers Conference, Poster Presentations for Stroke
- 6th Annual South Carolina Heart Care Alliance, Heart and Stroke Care Educational Forum
- 2014 International Stroke Conference – Awards and over 40 Abstract and Poster Presentations
- South Carolina Aging Research Network Conference - Oral/Poster Presentations
- Society for Epidemiologic Research's (SER) Annual Meeting - Poster Presentations
- Stroke Center Quarterly Newsletter
- World Health Organization Conference
- American Telemedicine Association
- SmartState Council of Chairs
- Spring 2013 Neurosciences Symposium, “Innovations in Neuroscience: Gateway to the Mind and Body”
- Symposium on International Collaboration and Exchange between MUSC and Suqian People’s Hospital, Suqian Municipality, Jiangsu Province, China
- Sickle Cell Stroke Research & Stroke Cooperative Working Groups a joint lecture with Morehouse School of Medicine

The American Heart Association recently announced the four institutions that will form the American Heart Association Strategically Focused Disparities in Cardiovascular Disease Research Network: MUSC (Director: Robert Adams, MD, MS), Morehouse School of Medicine (Director: Herman Taylor, Jr., MD, MPH), Northwestern University (Director: Myles Wolf, MD, MMSc), and the University of Colorado, Denver (Director: Spero Manson, MD). Over the next four years, these centers will receive a total of \$15 million, and each center will undertake three research projects focused on factors—such as socioeconomic status and genetic risk profile—that may underlie the disproportionate impact of cardiovascular diseases and stroke in some population groups. Each center will train three fellows, and all four centers will meet on a regular basis and engage in collaborative projects to accelerate information exchange and ideas.

Substantial progress has been made during this grant year. An administrative framework supported by a stellar team with a strong epidemiology core has been established to support the vision of becoming a nationally-recognized stroke and stroke risk research program focusing on health equity and wellness. Initial findings have been analysed which confirm the importance of focusing these efforts on communities within two regions of interest: the I-95 Corridor and Coastal Carolina regions. Numerous significant factors have been identified for measuring geographic disparities.

Heart Health – Preventive Cardiology Research Center

- Workshop on the Prevention, Assessment, and Treatment of Childhood Obesity developed and presented at the 2013 MUSC Frontiers in Pediatrics
- Heart Health program has expanded over 300% over the past four years, serving primarily minority families with limited financial means
- Heart Health has completed expansion into an American Academy of Pediatrics Stage 4 (tertiary care) comprehensive pediatric obesity program, now serving four communities within the MUSC catchment area, with telemedicine services for rural families

Heart Health and the Preventive Cardiology Research Center maintain an overarching focus on identifying and reducing childhood obesity-related cardiovascular risk factors that contribute to the

development of health disparities and impact service eligibility. Our primary objectives are to provide a comprehensive range of preventive cardiology and weight management services for the pediatric population of coastal South Carolina, with a particular emphasis upon identifying and addressing etiologic contributors to cardiovascular health disparities. Volunteer involvement and community engagement remain a high priority, as well as maintaining and expanding our existing network of providers and community partners. The project has significantly expanded its operations across all SEVIEW core domains (prevention, education, partnership, and research), providing a broad range of support to underserved children and families through our clinical program and through partnership efforts with area community centers, schools, churches, and other educational entities, as well as through collaboration with the Lean Team through SEVIEW and The Boeing Center for Children's Wellness.

Our programmatic activities have clear implications for military readiness. Early detection of potential and known cardiometabolic risk factors permits the implementation of corrective measures that may ultimately reduce the impact of childhood obesity on both the individual and population level. Early detection of acquired cardiovascular disease through non-invasive imaging is a key topic of interest with major public health implications, particularly among high-risk target populations such as obese children and adolescents with the metabolic syndrome. Early detection of acquired cardiovascular dysfunction permits early intervention, and early treatment potentiates a reduction in long-term health sequelae. Earlier detection of cardiometabolic risk, combined with effective intervention during childhood and adolescence, will help produce a healthier population of military recruits. Through all of our efforts, Heart Health and the Preventive Cardiology Research Center are creating new avenues for treating pediatric obesity, managing cardiovascular risk, and reducing health disparities.

SC TeleSupport: Diabetes Management Initiative (Effectiveness of Technology-Assisted Case Management in Low Income Adults with Type 2 Diabetes)

The team analyzed data of 65 subjects that completed the baseline and 3 months follow-up appointments. The preliminary data are promising and demonstrate effects on multiple diabetes-related outcomes. Based on the 3 months data, the findings suggest that technology-assisted case management is an effective intervention for low-income patients with type 2 diabetes. It had significant effects on hemoglobin A1c, diabetes knowledge, and self-monitoring of blood glucose. Based on the preliminary results, we have been funded by the state to disseminate the intervention to six rural hospitals in South Carolina as part of their patient centered medical home programs over the next 2 years.

Tele-Critical Care to Reduce Rural Health Disparities

With the primary goal on reducing the health risk factors, which could prevent military enlistment, an evaluation of the data obtained during SEVIEW project period identified important volume-outcome relationships for patients with sepsis and ventilator dependent respiratory failure. Patients cared for in higher volume hospitals have improved outcomes compared to patients cared for in lower volume hospitals. Additionally, patients transferred between hospitals – usually from smaller to larger hospitals – appear to have especially poor outcomes. The analysis of the databases revealed very large variations in the risk of death for sepsis patients. As a result of this finding the investigators developed a multivariable model that has the ability to predict a patient's risk of death during the admission, based on the patient's age, the presence of complex comorbid conditions, the need for ventilator care, and the presence of shock at admission.

The data analysis of identifying patients in smaller community hospitals who are high risk and who should be considered for early transfer to a specialty hospital for advanced care holds the potential for improving care of African Americans and Veterans and identifying factors to target for prevention of the various critical illnesses faced by this targeted military recruitment population. African-Americans had a significantly poorer survival and many of the SEVIEW target counties in SC along the I-95 corridor have predominant African American populations.

With the attained 2010 administrative hospital data from SCORS the program's co-investigator, Dr. Kit Simpson, developed programming codes, a de-identified database and performed an observational analysis of

data. With the objective to identify opportunities to improve care at the patient community and hospital level the investigators conducted a population based, descriptive investigation of critically ill patients in SC and sought to determine variation in patient survival associated with inter-hospital transfer of patients with VDRF including the impact of timing of inter-hospital transfer. The team hypothesized that patients with VDRF who were transferred between acute care hospitals would most benefit from early as opposed to later inter-hospital transfer. 308 patients met the inclusion criteria and were transferred between SC acute care hospitals. The study results showed of the 308 patients 42% died and 58% survived. Survival was numerically better at 71% for patients with transfer before 24 hours, compared to 57% for later transfers but not statistically significant. Risk of death increased 18% for each decade increase in patient age. African-American patients had a significantly increased risk of death compared to white patients. The study found that VDRF patients who were transferred early had a significantly improved chance of survival. Irrespective of timing of transfer, African-Americans had a significantly poorer survival.

The development of a system of inter-hospital collaboration to improve the care of critically ill patients in SC will provide new benefits for patients, families, and clinicians at partner hospitals. Patients will receive increased quality of care with fewer complications translating into reduced morbidity and mortality. Patients will also benefit from having an MUSC intensivist physician involved in their care via telemedicine. This will provide access to a medical specialty not currently available at our partner hospitals and intensivist directed care significantly improves mortality, morbidity, quality, and cost of care. Clinicians at partner hospitals will benefit from the opportunity to work with peers at MUSC in multiple contexts including educational forums, quality improvement meetings, case conferences, and during patient care. Finally, we believe the program will increase patient, family, and staff satisfaction.

Lean Team Initiative

- Publications
 - Two abstracts were published and accepted for poster presentations:
 - The Obesity Society annual conference in September 2012: “Evaluation of weight status, % body fat and lifestyle behaviors in JROTC students”. JD Key, CT Martin, LA King, Pediatrics, The Medical University of South Carolina, Charleston SC; S Slaughter, Office of the President, The Medical University of South Carolina, Charleston SC
 - Pediatric Academic Society in May 2013: “Doctor, it’s all muscle!”- Comparison of body fat versus BMI in assessment of obesity in teens. JD. Key, CT Martin, LA. King, Pediatrics, The Medical University of South Carolina, Charleston SC; S Slaughter, Office of the President, The Medical University of South Carolina, Charleston SC
- Presentations
 - With financial support from the BCCW and in collaboration with MUSC’s South Carolina Clinical Translational Institute (SCTR) and Center for Community Health Partnerships, we co-sponsored and presented at two obesity conferences held at the Medical University of South Carolina and Trident Technical College campus:
 - “SCTR Scientific Retreat on Obesity (October 19, 2012) featured national, regional and local presenters and drew over 200 participants from across the state.
 - “Conquering Tri-County’s Obesity Epidemic: Challenges, Changes, Choices” (December 6, 2012) was an invitational leadership meeting to discuss how combined community efforts can lead to the implementation of proven approaches and undertake research to identify new approaches to the obesity epidemic facing our communities and drew over 60 community leaders (agendas can be found in Appendices).
 - “Unified! A Voice Against Obesity”. SC DHEC: Lean Team Doc-adopt-initiative- Janice Key, MD. February 21, 2012 (video clip can be viewed at <http://www.scdhec.gov/scobesity/>)
- Other
 - Office of the Under Secretary of Defense for Personnel and Readiness/MPP (AP) Sharing of

- study results- during visit to Pentagon- May 2013
- The Honorable James E. Clyburn, Office of the Assistant Democratic Leader, U.S. House of Representatives- Shared study overview and school wellness initiatives –visit May 2013
- Mission Readiness (Amy Dawson Taggart)- Shared study overview and school wellness initiatives via email May-June 2013
- South Carolina Medical Society (Annual and monthly meetings)- Janice Key, MD “An effective model to improve school health” (2013-2014)
- New/Media
 - Newsprint articles were published about the BCCW Wellness Checklist Contest and Initiative and SC efforts to reduce Obesity and Health Disparities:
 - “DD2 Educators Celebrate More than Last Day of School” – Megan Dice, Channel 2 News (WCBD-TV). May 30, 2014
 - “Boeing Center for Children’s Wellness Program Expected to Expand Beyond Charleston”-David Quick, To Your Health, Post & Courier (www.postandcourier.com). May 27, 2014
 - “Using Junk Food for School Fundraisers, Rewards”- David Quick, To Your Health, Post & Courier ([postandcourier.com](http://www.postandcourier.com)). February 25, 2014
 - “Is the Lack of Good Fitting Sports Bras Contributing to Obesity”- David Quick, To Your Health, Post & Courier ([postandcourier.com](http://www.postandcourier.com)). November 5, 2013
 - “A+ for School Wellness: Goodwin Elementary is top wellness school in Charleston County this year”- David Quick, To Your Health, Post & Courier (www.postandcourier.com). June 4, 2013
 - “School wellness finale: Sullivan’s Island wellness finale reinforces lessons learned during school year”- David Quick, To Your Health, Post & Courier (www.postandcourier.com). June 11, 2013
 - “SC task force tackles childhood obesity”- Joey Holleman. The State (<http://www.thestate.com/>) January 27, 2012
- SC ETV
 - “Americas Armed Forces: Time for a Checkup”-moderator John King. July 2, 2013 8pm EST (<http://www.scetv.org/armedforces/>) SEVIEW researchers participated as audience in panel discussion.
- Sustainability Funding
 - Boeing Company: BCCW applied Oct 2012 and was awarded \$500,000 January 2013 and \$550,000 January 2014 to expand school wellness efforts in tri-county region
 - Coastal Community Foundation for CRBR mini grants: BCCW applied Oct 2011, 2012, 2013 & 2014 and awarded \$1500 (60 free entries) each year to promote physical activity in school students and teachers
 - Healthy South Carolina Initiative (HSCI)-BCCW: applied Jan 2013 and was awarded \$114,000 May 2013 to reduce prevalence of obesity by improving school health environment in 30 schools in CCSD, BCSD and D2SD
 - MUSC SCTR Community Engaged Scholar (CES) grant: BCCW applied for in partnership with CCSD; awarded \$10,000 Jan 2013; June 2013 to collect and manage BMI data in school district
 - Dr. Carolyn Jenkins (MUSC REACH) applied for funding (July 2013) to reduce Type II Diabetes and co-morbidities of obesity in Bamberg County and will partner with BCCW to improve school health; application not funded.
 - Dr. Kathy Melvin (MUSC SCTR) applied for NIH R01 (April 2014) grant to evaluate BCCW SWC & Doc’s Adopt School Health Initiative; not yet awarded.

Obesity is an increasing problem in children and adolescents, which specifically impacts the fitness of military recruits. The most common reason that recruits fail their enlistment physical is obesity and its related illnesses. The purpose of our program is to understand the best ways to improve the fitness of students

throughout Charleston County and to develop interventions and make recommendations for how JROTC instructors and students can benefit by improved school health initiatives and better weight status assessments. As obesity is a complex problem, our efforts entail a portfolio approach as recommended by the Institute of Medicine that focuses on improving the school health environment to include individual assessment as well as policy and environmental changes addressing nutrition and exercise; ensuring that students and teachers will have access to healthy foods and greater opportunities for physical activity.

During our SEVIEW project period (2010-2014), our five main project activities were implemented as planned with little exception and all major goals were met or exceeded. We completed collection and analysis of baseline data on 788 students and 17 instructors as well as second survey data on 489 students, which included BMI, %Body Fat, diet and exercise habits. Our findings revealed that many JROTC students and instructors are overweight and obese and fail to meet recommended guidelines for fruit and vegetable intake and physical activity. We found that JROTC students remain unfit through high school despite the fact that JROTC includes nutrition education and physical activity. Of significance, was the finding that BMI when compared to % Body Fat had a relatively low specificity and positive predictive value as a measure of overweight/obesity in adolescents. Therefore, accurate weight status assessment in teens may require measurement of body fat in addition to BMI, especially for those whose BMI is in the overweight range ($> 75\%$ -85th). Clinicians and researchers should consider further evaluation of body composition in teens using an additional tool such as an impedance device to determine weight status.

In addition, we conducted seven Focus Group sessions (6 student/1 instructor) that provided key insight into what changes can be made in the JROTC program or school environment to best address the obesity of high school students. Instructors expressed a desire for additional training in nutrition, health and physical education as well as the need for more frequent updating of JROTC curriculum. They also expressed the need for better food choices at school. Students echoed the need for better food choices at school and more access to affordable and healthier foods in general. In addition, they wanted nutrition and health education more than once a year in high school and expressed a need for gender specific physical activity in JROTC. Of further significance was that although students respect their instructors as role models they preferred that a school nurse or other health professional conduct weight status assessments and counseling. During individual school site visits to conduct exit surveys/interviews with instructors, we shared a study summary report, provided resources, education and training as well as left each school with an “assessment station” consisting of a stadiometer, digital scale and hand-held impedance analyzer to be used in partnership with the school nurse. Instructors indicated during these visits that they plan to connect with key wellness personnel at their school as well as make adjustments in their programs to include more frequent offering of nutrition/health education materials and increase the amount of physical activity in and outside the classroom. We learned that JROTC uniforms needed to include good quality and size appropriate sports bras for female participants, which may lead to greater willingness and ability of adolescent girls to engage in physical activity. A bra donation campaign “Support the Girls” was established in collaboration with a local business and 159 girls in 3 CCSD high schools have been outfitted. The campaign, although on going, was by itself not sufficient to reach our goal of outfitting the approximately 700 other girls enrolled in JROTC programs by the end of the 2013-14 school year.

Our school health initiative, which was refined and replicated during the project period, continues to grow and lead schools to make policy, system and environmental changes that improve the school health environment thus, impacting the health of students, staff and families. There is greater than expected interest in expanding our model statewide but we currently lack the funding to meet the number of communities who are ready to implement the model. Future projects should address improvement of school health environment, instructor training; gender specific fitness needs and weight status assessment methods by gender and race. We welcome any support that will enable us to continue the successes achieved during this project.

Community Engaged Scholars Initiative (CES)

Overall program outcomes will be evaluated during the no-cost extension period. The in-depth assessment of the CES Program will capture awards, national and international presentations,

publications, grants awarded, grant submissions and future plans for all CES-P cohorts and the overall program staff. This assessment will be reported in the next quarterly report.

CES has produced relevant results related to partnership capacity and sustainability. Markers of these results include formalized partnerships, publications, grant submissions led by community partners, national presentations by partner teams, and formalized plans for sustainability of the partnerships and projects. CES serves as a model to build the capacity of both academic and community partners to conduct research that promotes sustainable mechanisms for attaining health equity in our communities. Future work will include adaptations of the current training model based on RFA announcements and additional training needs of academic and community partners.

The team received \$40,000 through the SC Clinical and Translational Research Institute (SCTR) to fund the CES 2014 pilot grants. Additionally, we now have participants from Clemson University and The Citadel. Each of the Scholars have committed to seeking future funding to continue their efforts to improve the lives of those in the community.

Mobile Outreach Van, Educational and Navigation Health Services for Underserved Populations (MOVENUP)

Information about the successes of this community based cancer education training program was presented in the publications below:

- **Assessing an Intervention to Improve Clinical Trial Perceptions among Predominately African-American Communities in South Carolina** (Progress in Community Health Partnerships: Research, Education, and Action 2012;6:249-63)
- **Evaluating an Intervention to Increase Cancer Knowledge in Racially Diverse Communities in South Carolina** (Patient Education and Counseling 2011;83:256-60).
- **Unequal Burden of Disease, Unequal Participation in Clinical Trials: Solutions from African American and Latino Community Members** (Health and Social Work 2013 Feb;38:29-38) (Appendix I)

MOVENUP invited students to participate in the Ernest E. Just Symposium held at MUSC on February 28, 2014 to attract them to attend graduate school at MUSC. Three hundred ninety-four predominantly African American students participated from academic institutions in the mid-Atlantic region of the US.

MOVENUP coordinated a Student Forum that took place on the opening day of the Seventh Annual National Conference on Minority Health and Health Disparities in St. Thomas, US Virgin Islands on November 13, 2013. The full-day Forum included oral and poster presentations, networking sessions, and a keynote presentation. Eighty-seven students from 14 different academic institutions participated in the Student Forum.

Partnership Development

Community organizations involved in promoting MOVENUP's cancer education and awareness programs and activities through their membership and networks included: American Cancer Society, Arabina Temple #139, Athenian Club, Charleston County Stroke Action, Chi Eta Phi Nursing Sorority, church of Christ at Azalea Drive, Georgetown Outreach Ministry, Girl Scouts of America, Jack & Jill of America, Inc., Kappa Alpha Psi Fraternity, Inc., Low Country Chapter Oncology Nurses Association, Nehemia Chapter #388 Order of Eastern Stars, North Charleston Delta Sigma Theta, Inc., 100 Black men of Charleston, St. James-Santee Family health Center, Sea Island Comprehensive Health Cooperation, Sigma Pi Phi Fraternity, Inc. Thurgood Marshall Legal Society (Charleston County Black Lawyers Association), Tri-County Black Nurses Association, Upward Bound College of Charleston, USTOO Prostate Cancer Program, WE Venture, LLC for Men Only Symposium.

Next Steps and Sustainability

Brief Statement of Plans Related to Task 1. We will continue working with communities in the I-95 Corridor to schedule mobile health unit cancer screenings, and to support this effort, we will continue to apply

for funding opportunities. Upcoming funding opportunities include the Susan G. Komen grant program and the Mammograms in Action Grant Program.

Brief Statement of Plans Related to Task 2. We are continuing to focus on the MOVENUP program goal of reducing obesity in underserved populations by designing an NIH R01 grant testing strategies to reduce obesity and increase physical activity in women who have been recently diagnosed with breast cancer. The goal of the intervention is to reduce breast cancer recurrence risk and to enhance quality of life outcomes in this population.

Brief Statement of Plans Related to Task 3. Continuing MOVENUP's focus on training the next generation of cancer disparities researchers, MOVENUP's investigators submitted an NIH NCI R25E grant proposal in February 2014. This grant proposal is to develop a five-institution undergraduate cancer disparities research training curriculum, including MUSC, SC State University, Claflin University, the University of South Carolina, and Voorhees College.

Grants were funded to support leveraging non-SEVIEW financial resources for project sustainability. Four grants funded during 2012 continued into 2013.

ACTIVE

1P30 CA138313-06 (PI: Kraft)	04/01/14-03/31/19	2.4 calendar months
NIH/NCI	\$1,045,000	

Medical University of South Carolina-Cancer Center Support Grant

Major goal: To support the ongoing research infrastructure -- research programs, shared resources, developmental funds, administration -- of the Hollings Cancer Center at the Medical University of South Carolina to ensure the development of more effective approaches to cancer prevention, diagnosis, and therapy.

Role: Co-Investigator: Ford

3P20CA157071-03S1 (PI: Ford)	09/01/2013 – 08/31/2015	1.2 calendar months
NIH/NCI	\$114,396	

SC Cancer Disparities Research Center in Prostate and Breast Cancer (SC CaDRe)

The essential purpose of the SC CaDRe is to create a partnership between SC State University and the Medical University of South Carolina to expand cancer disparities research in South Carolina while cultivating a network of diverse cancer research scientists. Specifically, this project will identify factors influencing participation in a breast cancer genetic research study among African Americans, European Americans, and African Americans from the Sea Island population, an African American ethnic subgroup with minimal European American admixture.

Role: Principal Investigator: Ford (Effort on this project is supported through role as HCC Associate Director)

1R01MD005892-01	04/01/2012 - 12/31/2016	1.8 calendar months
(Multiple PIs: Ford and Esnaola)	\$1,250,000	
NIH/NCMHD		

Improving Resection Rates among African Americans with NSCLC

The purpose of this study is to evaluate the impact of a dynamic, patient navigation intervention in reducing potential barriers to surgical cancer care and improving resection rates among African Americans with early stage non-small cell lung cancer (NSCLC). We will test the intervention in a two-arm, cluster-randomized trial comparing the intervention versus enhanced usual care in a sample of 200 African Americans in SC with Stage I or II NSCLC. Study participants will be recruited from 6 geographically diverse study sites within a statewide, Cancer Clinical Trials Network.

Role: Multiple Principal Investigator: Ford

W81XWH-12-1-0043 (PI: Ford)	03/01/2012 – 02/28/2015	0.6 calendar months
DOD/CDMRP	\$184,216	

The South Carolina Collaborative Undergraduate HBCU Student Summer Training Program

The **goal** of the Training Program is to provide research training activities to **12** students over a 3-year period

from three Historically Black Colleges and Universities (HBCUs) in South Carolina: Claflin University, South Carolina State University, and Voorhees College. The three *aims* of the Training Program are to (1) provide training in the basics of research design and methods to undergraduate students per year from the three HBCUs, (2) to immerse four students per year in prostate cancer research, and (3) to implement a unique dual-level research mentoring strategy for the students.

Role: Principal Investigator: Ford

5P20CA157071-02 (PI: Ford) 09/22/2011 - 08/31/2015 1.8 calendar months
NIH/NCI \$680,749
SC Cancer Disparities Research Center in Prostate and Breast Cancer (SC CaDRe)
The essential purpose of the SC CaDRe is to create a partnership between SC State University and the Medical University of South Carolina to expand cancer disparities research in South Carolina while cultivating a network of diverse cancer research scientists.
Role: Principal Investigator: Ford

1 U24 MD006941-01 (PI: Tilley, Site PI: Mainous) 10/01/2011 – 09/30/2016 0.3 calendar months
NIH/NIA \$812,244
A Randomized Recruitment Intervention
We propose a randomized trial of a recruitment intervention to increase racial/ethnic diversity. For more common diseases such as hypertension, community approaches have successfully increased diversity in clinical trials, but are less successful when the disease is less prevalent and persons with the disease are more difficult to contact through these targeted community approaches. Our intervention will focus on specialty clinics where treatment trials for low prevalence diseases are usually conducted. The target of the intervention will be the specialists and clinical trial coordinators. The intervention is derived from approaches to changing provider behavior and improving healthcare quality (specialists) and methods similar to those used in patient navigation to assist racially/ethnically diverse patients in navigating the healthcare system (coordinators). Clinical site will be the unit of randomization
Role: Co-Investigator: Ford

W81XWH-11-2-0164 (PI: Slaughter) 09/01/2011 – 06/30/2014 0.6 calendar months
DOD/ Dept. of the Army – USAMRAA \$6,991,000
Southeastern Virtual Institute for Health Equity and Wellness (SEVIEW) Phase II
This initiative will evaluate the impact of a communication strategy to deliver evidence-based health information to medically underserved, rural and urban African Americans, including a unique group, the Sea Island Gullah population, with distinctive cultural practices and a Creole language containing many African words.
Role: Multiple Principal Investigator: Ford

5R21CA152865-02 (PI: Ford) 09/01/2011-8/31/2014 (no-cost ext.) 1.08 calendar months
NIH/NCI \$275,000
Optimizing Survivorship and Surveillance after Treatment for Colon Cancer
The purpose of this R21 study is to systematically investigate the role of multilevel factors on participation of colon cancer survivors in guideline-based post-treatment surveillance and care. Specifically, we will evaluate the role of personal factors (e.g., knowledge, attitudes and sociodemographics) and health care system factors (e.g., specialist-primary care communication, insurance) as contributors to survivor care experiences and outcomes.
Role: Principal Investigator: Ford

W81XWH-10-2-0057 (PI: Slaughter) 07/01/2010 – 06/30/2014 (no-cost ext.) 2.4 calendar months
DOD/ Dept. of the Army -- USAMRAA \$6,000,000
Southeastern Virtual Institute for Health Equity and Wellness (SEVIEW) Phase I
The SEVIEW investigators are implementing a series of community-based research and service outreach programs designed to reduce the burden of health disparities that arguably prevent enlistment in the armed

services or reduce the functional tenure of active duty military personnel. The investigators seek to develop novel methods to engage communities in the prevention and treatment of chronic diseases such as cancer.

Role: Multiple Principal Investigator: Ford

PENDING

R-D2C-1310-07276 (PI: Silvestri)

08/01/2014 – 07/31/2017

0.90 calendar months

PCORI

\$1,888,928.00

Extending Remote Access To Cancer Evaluation - The RACE Project

The purpose of this project is to determine whether lung cancer patients receiving Virtual Tumor Board (VTB) consultation will experience greater recollection and understanding, reduced perceptions of stress, greater perceptions of confidence, reduced cancer-specific distress, and greater satisfaction with their treatment decisions compared to those at usual care sites who do not receive the VTB.

Role: Co-Investigator: Ford

American Cancer Society (PI: Bian)

07/01/2014-06/30/2018

0.6 calendar months

ACS

\$742,564

Racial and Ethnic Disparities in Colorectal Cancer Screening and Outcomes

The primary goal of the proposed study is to employ a novel approach to evaluate CRC screening adherence among average-risk individuals. Specifically, the investigators will analyze longitudinal administrative claims data to repeatedly measure CRC screening adherence status among average-risk individuals. This innovative, improved measurement approach will provide new opportunities to better understand racial/ethnic differences in CRC screening adherence and outcomes in national samples of at-risk older adults.

Role: Site Principal Investigator: Ford

As described in the preceding pages of this report and by evidences documented in the attachments; we made substantial and quantifiable progress toward meeting our Tasks, listed in the Statement of Work for this grant. Our Mobile Health Unit (MHU) and Patient Navigation Services continued to build capacity in health care access in the I-95 Highway Corridor by coordinating and linking with other healthcare organizations in the counties, including the hospitals, Federally Qualified Community Health Centers (FQHCs), and private physicians. Our relationships with our existing community agencies and organizations including: SC Department of Health and Environmental Control, Bureau of Chronic Disease; Department of Social Services; Palmetto Health Care; the federally funded breast and cervical cancer screening program, the *Best Chance Network*; the SC Cancer Alliance; and the American Cancer Society remains strong.

We added new organizations and community groups to our list of community partners to assist with our long range goal of reducing disparities in cancer services access, morbidity and mortality in the I-95 Corridor which represents a vital opportunity and a valuable resource for improving health outcomes and fostering economic development.

We implemented a community based cancer education program focusing on the role of nutrition and physical activity in cancer prevention, improved cancer treatment outcomes, and prevention of cancer recurrence. We have already begun the planning process for 2013.

We continued our commitment to provide Cancer Education Awareness and Education related to nutrition/physical activities to communities in the I-95 Corridor Counties through our community based Cancer Education Guide (CEG) Facilitator training program.

We recruited undergraduate students from South Carolina HBCU's to become the next generation of prostate cancer researchers by exposing them to prostate cancer research in a 10-week research training curriculum, in which Student Fellows learn the fundamentals of biomedical research and a simultaneous 10-week prostate cancer research training curriculum, in which Student Fellows learn the continuum of prostate cancer research, from bench to bedside to community.

Health Empowerment Zone

- 43 Community based events providing health education about healthy eating and active living and/or screening for chronic disease including risk assessments and BMI
- In collaboration with Healthy North Charleston supported the development of 3 urban gardens
- Produced an instructional video on the use of CARTA transportation system
- *The Healthy Cookbook* a community based participatory project documented by SCETV
- New partnerships include *El Informador*, local Spanish newspaper, Crop-Up, a non-profit advocacy group for healthy foods, and the MUSC Dietetic Internship program

The Health Empowerment Zone addresses systems, environmental and policy change that can reduce obesity by impacting healthy eating and active living in North Charleston, South Carolina. Our work has engaged municipal, faith-based, and education, and community organizations in North Charleston. Our work has included working with a community coalition to recruit a grocery store into the “food desert”, accessing additional grant funds to stimulate 10 local projects through mini-grants, developing transportation guides and a video for communities to access fresh produce, developing a photo essay for presentation to municipal leaders on barriers to using bus transportation, working with WIC to identify local barriers to using vouchers at farmers markets for fresh produce, and participation in community-based events to provide information and resource navigation to services promoting healthy eating and active living.

Residents of low-income communities in North Charleston have consistently identified that healthy foods are more expensive and less available in their neighborhoods. Inexpensive fast foods have become the diet of many young families developing food preferences for high calorie and low nutrition foods among children and adults. When these food preferences are established in children, there is a greater potential for these children to become overweight prior to graduation from high school. This trend has been documented in North Charleston Schools. Federal food assistance programs, Food Stamps (SNAP), WIC, and National School Lunch Programs, were developed to provide increased access and availability to fresh produce and other healthy foods for low-income populations. In 2012 South Carolina was targeted as part of a national campaign to increase enrollment by the working poor, Hispanics, and the unemployed. Local officials with the federal food assistance programs have indicated that the national recruitment campaign has not significantly increased enrollment numbers in North Charleston. In addition there is an underutilization of vouchers provided by WIC for farmers’ markets. In the last year of the grant, we will be collaborate with our community partners to identify the barriers to enrollment in supplemental food programs, and the policies needed to address barriers related to transportation, culture, language, and education.

Healthy People in Healthy Communities

- Pastor’s Retreat and Workshop
- Establishment of the Community Health Advisory Board
- WCSD School Grant
- DASH Cookbook⁴⁷

Efforts generated awareness for leading a healthy lifestyle increased among residents and in the communities of Williamsburg County. We anticipate that our programs have contributed to the large reduction of cardiovascular mortality in South Carolina, which has improved from 51st to 34th in cardiovascular mortality between 1995 and 2009, and will be expanded and accelerated in Williamsburg County. We are both optimistic and confident that the progress in health promotion and disease prevention across the lifespan in Williamsburg County will provide the leading edge for progress in South Carolina and beyond.

Telemedicine in the Evaluation of Alzheimer’s Disease in a Rural, African American Population

- Initiation of descriptive data analysis seeking to confirm telemedicine assessments as effective as in person assessments.
- Grand total of sixty-eight patients enrolled in the study
- Forty-five patients completed all visits with 5 additional patients pending completion of diagnosis visits

- Fifty-four patients completed visits involving assessments via telemedicine with 21% failure rate
- Educational materials such as brochures and flyers were created for community outreach events with prior submittal to IRB (**Appendices J-L**).
- Received high markers on patient and caregiver surveys, indicating their satisfaction with care they received as well as the ease in the use of telemedicine.
- Conducted two educational community outreach events, both in Andrews, SC as well as Abbeville, SC, creating new connections for future research endeavors.
- Coordinated with Alzheimer's Association and local community members to discuss Alzheimer's disease as well as discoveries made during SEVIEW project.
- Educated rural medical community about cognitive impairment, significant indicator signs and new methods in the diagnosis of Alzheimer's disease.

While there have been challenges throughout the course of the project involving training, recruitment, enrollment and scheduling, the project team has developed policies, procedures and unique approaches ensuring the model can be reproduced. Although the process was difficult and time-consuming, the information obtained provides for reproducibility of the model. The model we developed has accomplished a recruitment of sixty-eight subjects as well as a 100% completion of eighteen patients' visits involving telemedicine and in-person assessment. In addition, we expect after the data analysis is completed to provide for full validation data for our approach.

We are confident that we have discovered key obstacles to providing primary care based assessments for Alzheimer's disease in elderly, African-American communities that are transferrable to other areas and populations around the country. Our preliminary review of the data obtained through the study reveals telemedicine assessments were as effective as in-person assessments. We hope the results of the descriptive data analysis will serve as confirmation and provide more concrete results from the project overall. Patient and caregiver surveys confirmed the ease in the use of video-conferencing as well as an overall positive experience from both the patient and caregiver perspective. Henceforth, we look forward to sharing the results of the study and our discoveries in regards to telemedicine, a revolutionary tool that could be the future of providing comprehensive specialty care to patients who otherwise would have difficulties accessing such crucial care. The connections and presence established within the rural communities during the project will serve beneficial in future endeavors regarding Alzheimer's disease.

Conclusion

SEVIEW Phase I, its Co-investigators and Administrative Core (SEVAC) has completed Year 5 (NCE) of 14 community-based research and service outreach programs. The six additional programs under SEVIEW Phase II are nearing the end of Year 4 (NCE) operation. The purpose of SEVIEW is to discover and deliver innovative health care and community capacity building solutions for underserved populations. An additional targeted outcome is to reduce the rejection rate as well as improve the enlistment opportunities and tenure of active duty military personnel.

SEVAC delivered operations, infrastructure access, strategic consultation, and quality process support to ensure proper directions, logistics, financial transactions, regulatory compliance, collaborative exchange, community-capacity building, and alignments with the goals of programmatic synergies and streamlining administrative processes and to foster strategic partnerships and programs to address the burden of health disparities.

SEVIEW's community-based research and service initiatives are aligned under three program categories addressing (1) Education, (2) Preventive Medicine, Health and Wellness, and (3) Community Partnerships and Outreach. Over 20,000 participants took part in the various activities and services offered by the projects. Synergies and relationships were developed between co-investigators, staff, and community leaders resulting in sustainability of research and healthcare activities.

A thoughtful evaluation process was completed, inclusive of an evaluation logic model to identify SEVIEW success objectives, using qualitative and quantitative methods to provide a comprehensive assessment of the program implementation and outcomes. The projects overwhelmingly report that stated goals were achieved and any goals that were not achieved were due to minor issues.

Eliminating health disparities will require enhanced efforts at preventing disease, promoting health and delivering appropriate care. This will necessitate improved collection and use of standardized data to identify high-risk populations and monitor the effectiveness of health interventions. Eliminating health disparities will also demand the development of new knowledge about determinants of disease, the causes of health disparities, and effective interventions that will turn the tide. Improving access to quality preventive care and treatment services is one aspect of a foundation for success in this arena. SEVIEW programs contribute in large measure to this foundation, and, more importantly, pave the way for future innovations in collaborative ways that healthcare systems, governments, academia, national associations and communities can achieve success.

References

- 1 Hood, RG. Pay-for-Performance—Financial Disparities and the Impact on Healthcare Disparities. *Journal of the National Medical Association*. 2007;99(8):953-58. Available at: <http://thecobbinsinstitute.org/LiteratureRetrieve.aspx?ID=121983>
- 2 2004 Annual National Healthcare Disparities Report: Quality of Care and Access to Care Comparisons by Selected Racial Groups 2000–2001. Rockville, MD: Agency for Healthcare Research and Quality (AHRQ), U.S. Dept. Health and Human Services. AHRQ Publication No 05-0014; December 2004
- 3 South Carolina Department of Health and Environmental Control. The Burden of Diabetes in South Carolina. 2009 Edition. Available at: <http://www.scdhec.gov/administration/library/CR-009477.pdf>
- 4 South Carolina Department of Health and Environmental Control. Diabetes in South Carolina. Fact Sheet produced by Office of Chronic Disease Epidemiology and Evaluation. Based on data from the 2007 Behavior Risk Factor Surveillance Survey, 2007 American Diabetes Association (ADA), DHEC SCAN (South Carolina Community Assessment Network), ADA 2009 Clinical Recommendations. Available at: <http://www.scdhec.gov/health/epidata/docs/Diabetes%20Fact%20sheet.pdf>
- 5 Hsu LL, Nevin RL, Tobler SK, Rubertone MV. Trends in Overweight and Obesity Among 18-year-old Applicants to the United States Military, 1993-2006. *Journal of Adolescent Health*. 2007;41(6):610-12.
- 6 Nolte R, Franckowiak SC, Crespo CJ, Andersen RE. U.S. Military Weight Standards: What Percentage of U.S. Young Adults Meet the Current Standards? *American Journal of Medicine*. 2002;15;113(6):486-90.
- 7 Bedno, SA, Lang DE, Daniell WE, Wiesen AR, Datu B, Niebuhr DW. Association of Weight at Enlistment with Enrollment in the Army Weight Control Program and Subsequent Attrition in the Assessment of Recruit Motivation and Strength Study. *Military Medicine*. 2010;175(3):188-93.
- 8 Recruit Medicine. Chapter 22: Nutrition and Weight Control. Department of Defense, Office of the Surgeon General, US Army, Borden Institute. 2006. https://ke.army.mil/bordeninstitute/published_volumes/recruit_medicine/RM-ch22.pdf
- 9 CLIs and TAWs
<http://pico.library.musc.edu/CLIs.php>
- 10 SC AHEC
www.scahec.net
- 11 CME Website
<http://scahec.net/schools/library.html>
- 12 Halm EA, Lee C, Chassin MR. Is Volume Related to Outcome in Health Care? A Systematic Review and Methodologic Critique of the Literature. *Ann Intern Med* 2002; 137:511-520
- 13 Cifuentes J, Bronstein J, Phibbs CS, et al. Mortality in Low Birth Weight Infants According to Level of Neonatal Care at Hospital of Birth. *Pediatrics* 2002; 109:745-751
- 14 MacKenzie E, Rivara F, Jurkovich G, et al. A National Evaluation of the Effect of Trauma-Center Care on Mortality. *N Engl J Med* 2006; 354
- 15 Nathens AB, Jurkovich GJ, Maier RV, et al. Relationship Between Trauma Center Volume and Outcomes. *JAMA* 2001; 285:1164-1171
- 16 Phibbs CS, Baker LC, Caughey AB, et al. Level and Volume of Neonatal Intensive Care and Mortality in Very-Low-Birth-Weight Infants. *N Engl J Med* 2007; 356:2165-2175
- 17 Angus DC, Shorr AF, White A, et al. Critical care delivery in the United States: Distribution of services and compliance with Leapfrog recommendations. *Crit Care Med* 2006; 34:1016-1024
- 18 Esteban As, Anzueto A, Frutos F, et al. Characteristics and Outcomes in Adult Patients Receiving Mechanical Ventilation. *JAMA* 2002; 287:345-355
- 19 Glance LG, Li Y, Osler TM, et al. Impact of patient volume on the mortality rate of adult intensive care unit patients. *Crit Care Med* 2006; 34:1925-1934
- 20 Kahn J, Goss C, Heagerty P, et al. Hospital volume and the outcomes of mechanical ventilation. *N Engl J Med* 2006; 355:41–50

- 21 Needham DM, Bronskill SE, Rothwell DM, et al. Hospital volume and mortality for mechanical ventilation of medical and surgical patients: A population-based analysis using administrative data. *Crit Care Med* 2006; 34:2349-2354
- 22 Peelen L, de Keizer NF, Peek N, et al. The influence of volume and intensive care unit organization on hospital mortality in patients admitted with severe sepsis: a retrospective multicentre cohort study. *Critical Care* 2007; 11:R40
- 23 Barnato AE, Kahn JM, Rubenfeld GD, et al. Prioritizing the organization and management of intensive care services in the United States: The PrOMIS Conference. *Crit Care Med* 2007; 35:1003-1010
- 24 Ewart GW, Marcus L, Gaba MM, et al. The Critical Care Medicine Crisis: A Call for Federal Action: A White Paper From the Critical Care Professional Societies. *Chest* 2004; 125:1518-1521
- 25 Kahn JM, Asch RJ, Iwashyna TJ, et al. Physician attitudes toward regionalization of adult critical care: A national survey. *Crit Care Med* 2009; 37:2149-2154
- 26 Kahn JM, Asch RJ, Iwashyna TJ, et al. Perceived barriers to the regionalization of adult critical care in the United States: a qualitative preliminary study. *BMC Health Services Research* 2008; 8
- 27 Kahn JM. Volume, outcome, and the organization of intensive care. *Critical Care* 2007; 11:129
- 28 The Lean Team
www.musc.edu/leanteam
- 29 SC Student Health and Fitness Act 2005 http://www.scstatehouse.gov/sess116_2005-2006/bills/3499.htm
- 30 Eat Smart Move More Charleston Tri-County (ESMMCTC)
www.esmmusc.org
- 31 American Cancer Society. Cancer Facts & Figures for African Americans 2009-2010 2009.
- 32 South Carolina Department of Health and Environmental Control: 2005 Age-Adjusted Rates 2005.
- 33 Brinton LA, Sherman ME, Carreon JD, Anderson WF. Recent trends in breast cancer among younger women in the United States. *J Natl Cancer Inst* 2008;100:1643-8.
- 34 Chornokur G DK, Borysova M, Kumar N. Disparities at Presentation, Diagnosis, Treatment and Survival in African American Men, Affected by Prostate Cancer. *Prostate* 2011;71:985-97
- 35 AD Registry Prevention Center, "Statewide AD and related disorders registry." (2007)
- 36 Demirovic J, Prineas R, Loewenstein D, Bean J, Duara R, Sevush S, Szapocznik J. Related Art prevalence of dementia in three ethnic groups: the South Florida program on aging and healing *Ann Epidemiol.* 2003 Jul;13 (6) : 472-8.
- 37 Tang Mx, Cross P, Andreews H, Jacobs DM, Small S, Bell K, Merchant C, Lantigua R, Costa R, Incidence of AD in African-Americans, Caribbean Hispanics, and Caucasians in northern Manhattan. *Neurology.* 2001. Jan 9;56(1):49-56
- 38 Tang, M. X., Stern, Y., Marder, K., Bell, K., Gurland, B., Lantigua, R., Andrews, H., Feng, L., Tycko, B., and Mayeux, R. The APOE-epsilon4 allele and the risk of Alzheimer disease among African Americans, whites, and Hispanics. *JAMA*, 279: 751-5, Mar 11, 1998.
- 39 Fitzpatrick AL, Kuller LH, Ives DG, Lopez OL, Jagust W, Breitner JCC, Jones B, Lyketsos C, Incidence and prevalence of dementia in the Cardiovascular Health Study J. *Am Geriatr Soc.* 2004 Feb; 52 (2) : 195-204
- 40 African Americans and Alzheimer's Disease: The silent Epidemic. Alzheimer's Association 2005
- 41 Progressnotes
<http://www.muschealth.org/pn/archive/pdfs/OctoberNovember2012Progressnotes.pdf>
- 42 America's Armed Forces: Time for a Checkup
<http://video.scetv.org/video/2252372276/>
- 43 Our Nation's Health: A Focus on Social Determinants
<http://scetv.org/health/>
- 44 Zip Code: Your Neighborhood, Your Health
<http://scetv.org/health/>
- 45 Hands On Health South Carolina

- <http://handsonhealth-sc.org>
- 46 Fighting Cancer One Woman at a Time
<http://www.ebony.com/wellness-empowerment/fighting-cancer-one-woman-at-a-time-405#axzz2XG4TZisN>
- 47 DASH Cookbook
<http://www.ccihealth.org/dash.html>
- 48 Harris PA, Taylor R, Thielke R, Payne J, Gonzalez N, Conde JG. Research electronic data capture (REDCap)--a metadata-driven methodology and workflow process for providing translational research informatics support. Journal of biomedical informatics. 2009; 42:377-81.
- 49 SEVIEW Website
www.musc.edu/seview
- 50 SEVIEW Facebook Page
<http://www.facebook.com/SEVIEW1>
- 51 SEVIEW Twitter Account
<http://twitter.com/#!/SEVIEW1>
- 52 SEVIEW Pinterest Account
<http://pinterest.com/seview/>
- 53 SEVIEW Google Plus Account
<https://plus.google.com/113856284520869767628/posts>

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Appendix A

SE VIEW VISION

To develop a nationally recognized multidisciplinary, inter-professional team of researchers, educators, outreach professionals and laypersons to eliminate health disparities.

SE VIEW GOALS & OBJECTIVES

Goal A: Integrate MUSC's model initiatives focused on health disparities into the SE VIEW by identifying programmatic synergies and streamlining administrative processes.

Objectives:

A1: Establish a single Administrative and Coordinating Core to oversee project logistics, financial transactions, regulatory compliance, and bi-directional communications.

A2: Establish an Evaluation and Tracking Core to monitor SE VIEW activities and provide timely feedback to the Principal Investigator, Initiative Directors and TATRAC to improve program quality.

Goal B: Develop strategic partnerships and programs to address the burden of health disparities.

Objectives:

B1: Establish an Educational Program to reduce health disparities: Program initiatives will focus on increasing awareness of health issues in communities that bear a disproportionate burden of chronic diseases, and address educational deficits related to chronic diseases. SE VIEW Projects linked to this goal:

- MUSC Public Information and Community Outreach Initiative (PICO)
- Community Institutes for Traditional and Nontraditional Leaders

B2: Establish a Preventive Medicine, Health and Wellness Program to reduce health disparities: Program initiatives will expand proven strategies and/or develop novel methods to engage communities, and remove barriers to effective healthcare. SE VIEW Projects linked to this goal:

- Stroke Risk Reduction Initiative (SRRI)
- Heart Health Initiative
- SC TeleSupport: Diabetes Management Initiative
- Tele-Critical Care Program to Reduce Health Disparities (CREST)
- Telemedicine in the Evaluation of Alzheimer's Disease in a Rural, African American Population

B3: Establish a Community Partnerships and Outreach Program to reduce health disparities: These activities will provide the foundation for integrated efforts to address chronic disease burden in populations that could provide talented recruits for military service, and disseminate evidence-based research findings. SE VIEW Projects linked to this goal:

- Lean Team Initiative
- Community Engaged Scholars Initiative (CES)
- The Health Empowerment Zone (HEZ)
- Healthy People in Healthy Communities
- Mobile Outreach Van Educational and Navigational Health Services for Underserved Populations Initiative (MOVENUP)

INPUTS

Churches/Faith-Based Organizations, Clinics/Health Centers, Emergency Dept., Federal Clinics, Funding Support, Government Agencies, Grocery Stores, Healthcare System, Hospitals Materials (Training Tools, Evaluation), MUSC, Health Clubs, PTO, Restaurants, Schools, SE View Consultants, SE View Projects, staff, tools and worksites

OUTPUTS

Activity

Community Engagement, Consultation, Cultural Exchange, Healthcare, Health Promotion, Health Career Academy, Instructional, Mentoring, Networking, Outreach, Policy, Prevention, Research, Screening, Service, Training, Web and Internet, Wellness Council

Target Population

Communities, I-95 Corridor, Coastal Carolina, Groups: African Americans, Community Leaders, Elderly, Obese Children, Rural Population, School Aged Children, Teenagers

OUTCOMES

Short Term

Increase knowledge base; increase skills

Medium Term

Utilization of knowledge base

Long Term

Increase positive behaviors; decrease in negative

DATA

Data Sources

Activity Logs, Attendance Logs, Behavioral Risk Factor Surveillance System, Census Data, Clinic Data, Community Members, Community Partners, Comorbidity (DRGs & ICD-9),

and awareness	behaviors	<p>Council of Governments, De-Identified Ref. Lists, Follow-Up Records, Federally Qualified Health Centers Patient Electronic Care Sys. (FQHC - PECS), Partners, Hospital Discharge Data, Institutional Data, Land Developers, Medicare/Medicaid Data, Meeting Agendas, Meeting Minutes, MUSC Faculty, MUSC Students, Neighborhood Assoc., Office Of Vital Records</p> <p>Participant Logs, Program Data, Program Faculty, Program Participants, Public Access Info, Registration Forms, SC Dept of Health, SC Off. Of Res. & Statistics, School Attendance Zones, School Data, Secondary Sources, Standardized Media Contact Form, Store Audit Survey, Structured Activity Form, Telephone Logs, Transportation Authority, Web “Hits”, Working Group Reports, Youth Risk Behavioral Surveillance System</p> <p>Data Collection Methods Case Studies, CDC Change Questions, Clinical Screenings, Current Resource List, Focus Groups, Interviews, Key Informant Interviews, Medical Assessments/Tests, Observation, Organizational Assessments, School Cafeteria Audits, Screening Tools, Service Delivery, Surveys –General, Tests/Assessments, Walkability Survey, Windshield Survey</p> <p>Data Collection Measures Clinical Dementia Rating Scale, Clock Drawing Test, Continuing Educ. Credits, Depression (PHQ-9), Diabetes Fatalism Scale, Diabetes Knowledge Questionnaire, Diagnostic Evaluations, Essential Medical Tests/Screens (Hemoglobin A1C; Blood Pressure; Cultures; Body Mass Index; Lipids Profile), Geriatric Depression Scale, Health Literacy, Logical Memory IIA, Medical Comorbidity (Charlson Index), Mini Mental State Exam, Modified Hachinski Ischemia Scale, Morisky Medication, Adherence Scale Patient Demographics Survey, Perceived Diabetes Self Efficacy Scale, Quality of Life Measures, Resource Use, Social Support, Standard Clinical Assessment, Summary of Diabetes, Self-Care Activities Scale, Supportive Care Measures</p>
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EVALUATION QUESTIONS

Process Evaluation Questions	Outcome Evaluation Questions	Impact Evaluation Questions
<p><u>Inputs</u></p> <p>How many resources (human and financial) are needed to achieve goals?</p> <p>Who will implement the program?</p> <p>Who provided program services?</p> <p>What are the characteristics of coalitions, collaborations, partnerships, etc.?</p> <p>Are the resources adequate?</p> <p><u>Activities</u></p> <p>How many programs/sessions/activities delivered?</p> <p>What services/activities were provided?</p> <p>Was the curriculum delivered as intended?</p> <p>Are implementation objectives being attained?</p>	<p><u>Increase Knowledge</u></p> <p>Did knowledge increase?</p> <p><u>Change Behavior</u></p> <p>Did we have behavioral changes?</p> <p><u>Achieve Outcomes</u></p> <p>Was programmatic integration achieved?</p> <p>Were strategic partnerships established?</p> <p>Are outcome objectives being achieved?</p> <p>Did the projects/interventions improve access to services?</p> <p>Did the projects/interventions improve the quality of services provided?</p>	<p>Which aspect of the program contributed more to the outcomes?</p> <p>Are there unintended outcomes?</p> <p>Are participants satisfied with program implementation and outcomes?</p> <p>What changes have participants made as a result of the program?</p> <p>Who does the program affect directly and indirectly?</p> <p>Who benefits from this program and how?</p> <p>Are the program’s results worth the resources?</p>

<p>What was the quality of the delivery (consistency and fidelity)?</p> <p><u>Target Population</u></p> <p>How many participants are in the program?</p> <p>How many participants are in each session/activity?</p> <p>What is the participant's level of satisfaction with the program/activity?</p> <p>What were the facilitators to implementation?</p>		
<p><u>INDICATORS</u></p> <p>Levels of participation, levels of service and activity, levels of support, establishment of advisory groups, listing of community programs and services, evidence of partnership activities, achievement of objectives, changes in knowledge/behavior, changes in vending machine choices, changes in physical activity, improved nutrition, increase in DASH-type meals, research productivity, reduction in health indicators, increased access to healthcare services</p>		

Appendix B

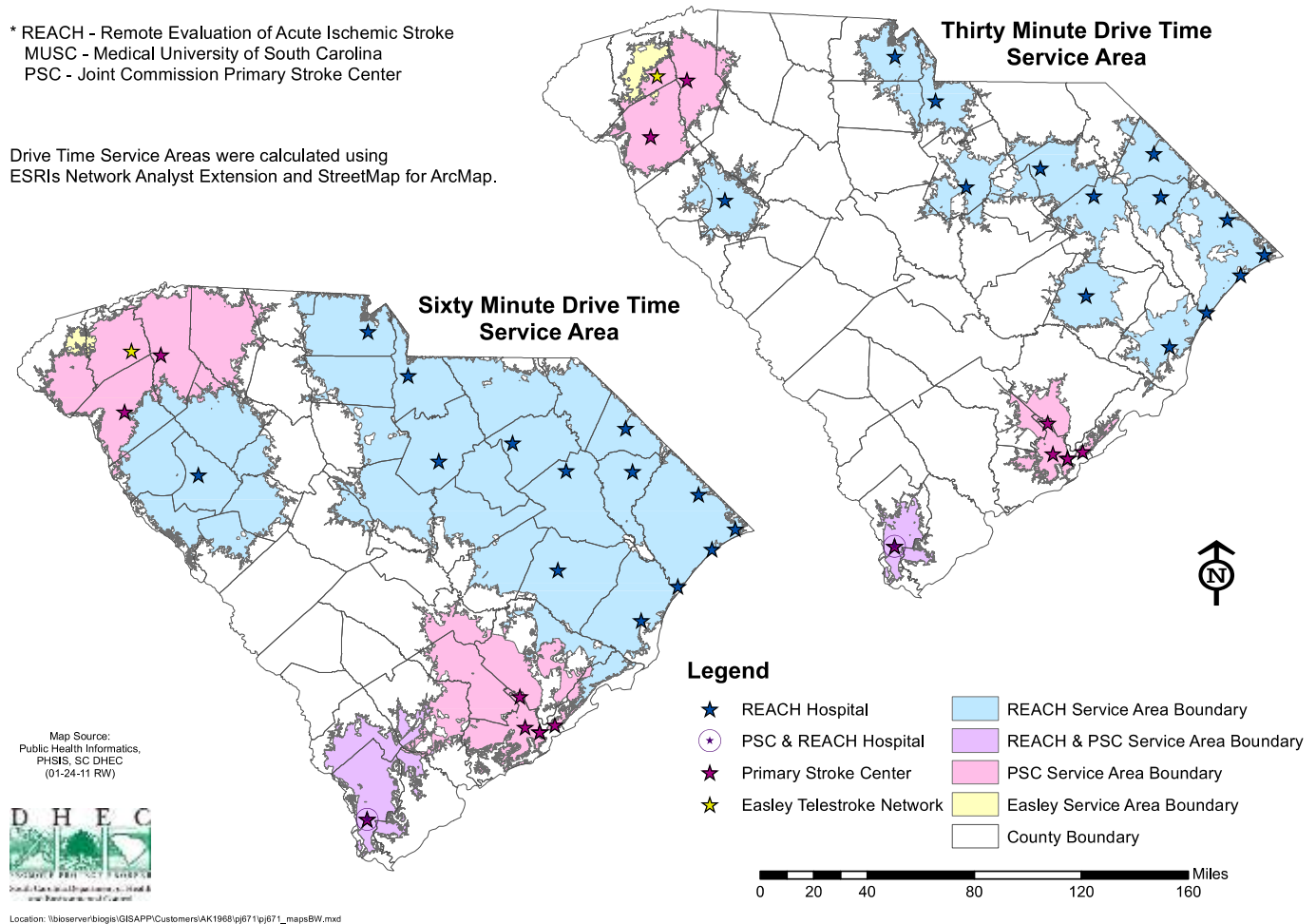
Illustrates the small number of Primary Stroke Centers in SC and how REACH MUSC has improved geographic access to stroke resources.

Primary Stroke Centers and REACH MUSC* Stroke Network

Population Served by PSC* and REACH Hospitals

* REACH - Remote Evaluation of Acute Ischemic Stroke
MUSC - Medical University of South Carolina
PSC - Joint Commission Primary Stroke Center

Drive Time Service Areas were calculated using
ESRIs Network Analyst Extension and StreetMap for ArcMap.



Appendix C

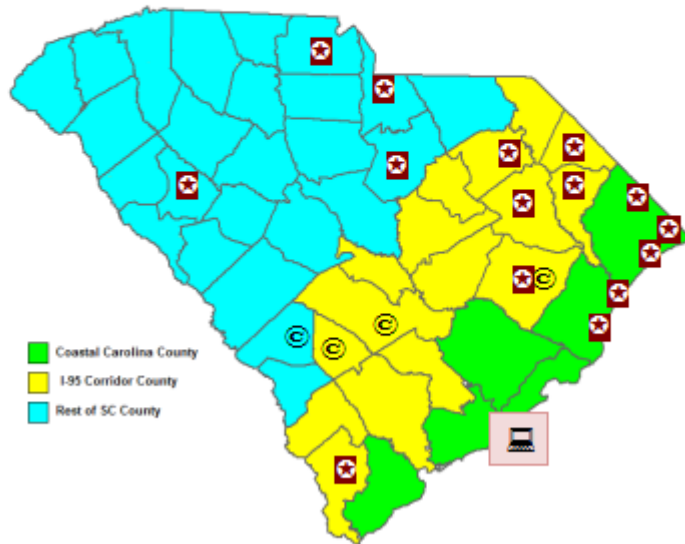
Highlights the REACH MUSC Telestroke sites based on the established SE VIEW regions.

Update: 9/18/2011

REACH MUSC Telestroke Site Map by SE VIEW Region

County	Region	Tele-Medicine Sites
BEAUFORT	Coastal Carolina	-
BERKELEY	Coastal Carolina	-
CHARLESTON	Coastal Carolina	Hub
GEORGETOWN	Coastal Carolina	R(2)
HORRY	Coastal Carolina	R(3)
BAMBERG	I-95 Corridor	C
CALHOUN	I-95 Corridor	-
CLARENDON	I-95 Corridor	-
COLLETON	I-95 Corridor	-
DARLINGTON	I-95 Corridor	R
DILLON	I-95 Corridor	R
DORCHESTER	I-95 Corridor	-
FLORENCE	I-95 Corridor	R
HAMPTON	I-95 Corridor	-
JASPER	I-95 Corridor	R
LEE	I-95 Corridor	-
MARION	I-95 Corridor	R
MARLBORO	I-95 Corridor	-
ORANGEBURG	I-95 Corridor	C
SUMTER	I-95 Corridor	-
WILLIAMSBURG	I-95 Corridor	R,C
ABBEVILLE	Rest of SC	
AIKEN	Rest of SC	
ALLENDALE	Rest of SC	
ANDERSON	Rest of SC	
BARNWELL	Rest of SC	C
CHEROKEE	Rest of SC	
CHESTER	Rest of SC	
CHESTERFIELD	Rest of SC	
EDGEFIELD	Rest of SC	
FAIRFIELD	Rest of SC	
GREENVILLE	Rest of SC	
GREENWOOD	Rest of SC	R
KERSHAW	Rest of SC	R
LANCASTER	Rest of SC	R
LAURENS	Rest of SC	
LEXINGTON	Rest of SC	
MCCORMICK	Rest of SC	
NEW BERRY	Rest of SC	
OCONEE	Rest of SC	
PICKENS	Rest of SC	
RICHLAND	Rest of SC	
SALUDA	Rest of SC	
SPARTANBURG	Rest of SC	
UNION	Rest of SC	
YORK	Rest of SC	R

SC SE VIEW Regions



MUSC Telemedicine Sites REACH MUSC and CREST Programs

- ★ = Active REACH
- ★ = Pending REACH
- ★ = CREST

Appendix D

REACH MUSC Telemedicine Network.



REACH-MUSC Hospital Partners (Spokes)				VOLUMES			PERCENTAGES		HOSPITAL INFO		
Site Name and Location	County	SE VIEW Region	Start Date	Consults	tPA Given	Transport to MUSC	% Presumed Ischemic Stroke Treated with tPA	% Transfer to MUSC	# Hosp. Beds	Annual ED Visits	Distance to MUSC (Miles~)
Georgetown	GEORGETOWN	Coastal	5/1/2008	360	48	123	27%	34%	131	31,990	61
Waccamaw	GEORGETOWN	Coastal	5/6/2008	403	80	131	40%	33%	140	24,000	82
McLeod	FLORENCE	I-95	5/7/2008	546	122	67	43%	12%	453	63,000	133
Grand Strand	HORRY	Coastal	9/1/2008	60	20	45	34%	75%	220	62,000	102
Marion	MARION	I-95	9/18/2008	171	26	69	35%	40%	124	23,885	119
Williamsburg	WILLIAMSBURG	I-95	12/23/2008	168	30	96	37%	57%	25	11,000	74
Coastal Carolina	JASPER	I-95	1/20/2010	253	28	91	31%	36%	45	18,000	88
Piedmont	YORK	Rest of SC	3/26/2010	388	88	15	45%	4%	288	46,000	187
Kershaw	KERSHAW	Rest of SC	5/19/2010	243	25	47	22%	19%	121	24,000	148
McLeod-Dillon	DILLON	I-95	7/29/2010	233	33	53	32%	23%	79	25,000	163
Springs	LANCASTER	Rest of SC	10/26/2010	141	31	27	30%	19%	231	30,000	176
Carolina Pines	DARLINGTON	I-95	1/21/2011	89	15	34	32%	69%	116	33,000	143
Loris Community	HORRY	Coastal	2/28/2011	130	18	29	35%	22%	105	20,000	117
Loris-Seacoast	HORRY	Coastal	2/28/2011	86	5	14	15%	16%	50	20,000	116
Self Regional	GREENWOOD	Rest of SC	3/2/2011	148	35	15	51%	10%	354	40,000	191
TOTALS				3,419	604	856	36%	18%	2,482	471,875	127 Average

□ Self-Report Hospital Data.

⊕ BEDS = General Hospital Beds

~ Source: MapQuest (Fastest Driving Distance in Miles)

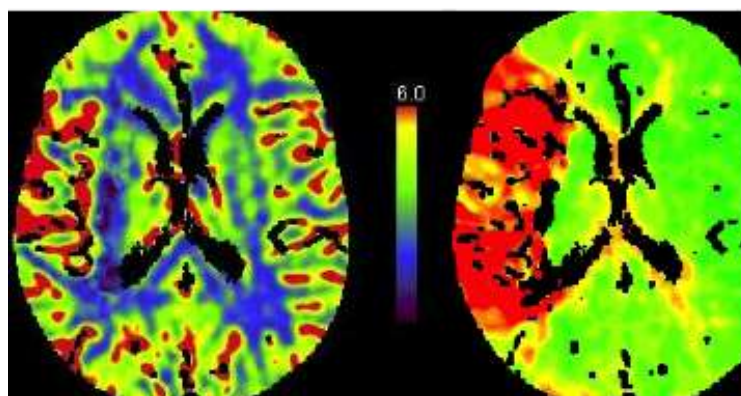
⊕ Source: SC DHEC at: <http://www.scdhec.gov/health/licen/hrhptl.pdf>

Appendix E

Excerpt from the newsletter, *Stroke Quarterly* that focuses on stroke education, awareness and publications.

Medical University of South Carolina **Stroke Quarterly**

from the Stroke Research and Education Center



Spring 2014

■ CONTENTS

- 1 From the Directors' Desks
- 2 Opportunities & Events
- 3 News, Publications & Team
- 4 Tip & Support

■ FROM THE DIRECTORS' DESKS

Dear readers,

Winter is finally over and we are in the midst of planning our spring and summer activities at the Stroke Research and Education Center at MUSC. We have been quite busy this past year and are planning several big projects including hosting some community events.

Last year was full of exciting events and new opportunities for the Stroke Program. We had our first successful MUSC Stroke Awareness event in May. We are looking forward to an even bigger and better event this spring. Our 10th "Strike Out Stroke" event at the Charleston RiverDogs' Stadium had the largest participation since its inception, providing 149 blood pressure screenings and helpful stroke information to the attendees. November's provider education conference, the MUSC Comprehensive Stroke and Cerebrovascular Update, provided the most up-to-date stroke treatment and prevention information to doctors in the community. The conference was very well attended.

In addition to our community events, our research portfolio is growing and each grant application cycle brings new opportunities to grow our center. It also provides new learning opportunities for junior researchers and medical students.

We hope you enjoy reading about our current outreach events and research progress. We look forward to seeing you soon.

Tanya Turan, MD/MSCR
Director, MUSC Stroke
Division



Dan Lackland, DrPH
Director, Stroke Research
& Education Center

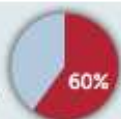


Christine Holmstedt, DO
Co-Director, Stroke &
Cerebrovascular
Medical Team



■ DID YOU KNOW?

Almost 60% of stroke patients don't get to a doctor or hospital until 24 hours after the stroke.



Appendix F

Chowdhury et al.: "Lean Body Mass May Explain Apparent Racial Differences in Carotid Intima-Media Thickness in Obese Children," *Journal of the American Society of Echocardiography*, vol. 27, no. 5 (May 2014), pp. 561-567.

Lean Body Mass May Explain Apparent Racial Differences in Carotid Intima-Media Thickness in Obese Children

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Background: Racial differences in carotid intima-media thickness (cIMT) have been suggested to be associated with the disproportionately high prevalence of cardiovascular disease in black adults. The objective of this study was to evaluate the effects of cardiovascular risk factors on the racial differences seen in cIMT in obese children.

Methods: Obese subjects aged 4 to 21 years were recruited prospectively. Height, weight, blood pressure, fasting insulin, glucose, lipid panel, high-sensitivity C-reactive protein, and body composition by dual-energy x-ray absorptiometry were obtained. B-mode carotid imaging was analyzed by a single blinded physician.

Results: A total of 120 subjects (46 white, 74 black) were enrolled. Black subjects exhibited greater cIMT (0.45 ± 0.03 vs 0.43 ± 0.02 cm, $P < .01$) and higher lean body mass index (19.3 ± 3.4 vs 17.3 ± 3.2 kg/m², $P = .02$) than white subjects. Simple linear regression revealed modest associations between mean cIMT and race ($R = 0.52$, $P < .01$), systolic blood pressure ($R = 0.47$, $P < .01$), and lean body mass ($R = 0.51$, $P < .01$). On multivariate regression analysis, lean body mass remained the only measure to maintain a statistically significant relationship with mean cIMT ($P < .01$).

Conclusions: Black subjects demonstrated greater cIMT than white subjects. The relationship between race and cIMT disappeared when lean body mass was accounted for. Future studies assessing the association of cardiovascular disease risk factors to cIMT in obese children should include lean body mass in the analysis. (J Am Soc Echocardiogr 2014;27:561-7.)

Keywords: Obesity, Race, Carotid intima-media thickness, Lean body mass, Children

In the United States, adults of black African descent have a higher prevalence of obesity and an increased risk for cardiovascular disease than whites of European origin.¹⁻³ Carotid intima-media thickness (cIMT) is a strong predictor of cardiovascular disease; it has been shown to be higher in black than in white healthy adults.⁴⁻¹⁰ Traditional risk factors for cardiovascular disease, such as hypertension, contribute to higher cIMT and increased risk for cardiovascular disease in black adults.^{11,12}

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Similar to adults, cardiovascular disease risk factors in childhood and adolescence also show racial differences.^{13,14} In fact, racial differences in cIMT have been reported in healthy nonobese children.¹⁵ The etiology behind the racial differences in cIMT in children is not clear, and no studies have examined whether such differences persist in obese children, a group at high risk for future cardiovascular disease. If racial differences are found in cIMT in obese patients, the cardiovascular risk factors associated with these differences may provide targets for intervention in future studies. The primary objectives of this study were (1) determine if racial differences exist in cIMT between white and black obese children and, if such differences are present, (2) to identify measures of body composition and markers of cardiovascular risk that contribute to these differences. We hypothesized that black obese children would have higher cIMT than whites and that blood pressure, race, and lean body mass would be associated with cIMT.

METHODS

This was a prospective, cross-sectional study. All tests were conducted during a single assessment using a standardized protocol. The

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Abbreviations
BMI = Body mass index
cIMT = Carotid intima-media thickness
LDL = Low-density lipoprotein
QUICKI = Quantitative insulin sensitivity check index

Carolina's childhood obesity management clinic. Inclusion criteria were (1) body mass index (BMI) > 95th percentile, (2) age 4 to 21 years, and (3) white or black race. Patients of Hispanic ethnicity were not included in the analysis. Subjects who were pregnant, were taking insulin, or were taking oral steroids were excluded. Patients were enrolled consecutively as long as they were not of Hispanic ethnicity and did not have one of the three exclusion factors listed. Study visits were rescheduled if patients had experienced febrile illnesses within 72 hours of the planned study date.

Procedures

Patients' anthropomorphic assessments were performed at the Clinical and Translational Research Center. Blood pressure was measured using an automatic cuff (Dinamap; GE Healthcare, Little Chalfont, United Kingdom) with an appropriately sized cuff after remaining seated for 5 min. The average of two blood pressure measurements, one taken at the beginning of the visit and one at the end, was used in the analysis. Patients' fasting status was confirmed before phlebotomy. Laboratory values obtained included serum insulin, glucose, low-density lipoprotein (LDL), high-density lipoprotein, triglycerides, and high sensitivity C-reactive protein. Body composition (total body fat, percentage body fat, and lean body mass) was quantified using dual-energy x-ray absorptiometry.

Carotid arteries were studied with a duplex scanner using a 7.5-MHz linear-array transducer (iE33, 4–8 MHz; Philips Medical Systems, Andover, MA). All B-mode carotid imaging was performed by a single sonographer. Participants were positioned supine with the neck rotated at 45° to expose an area from the clavicle to the angle of the jaw. Recommendations from the American Society of Echocardiography's consensus statement on cIMT were followed; that is, measurements from both carotid arteries were used, and cIMT was measured only from the far wall of the artery.¹⁶ Measurements from the near wall were not used, as recommendations from the Measuring Effects on Intima-Media Thickness: An Evaluation of Rosuvastatin study group were not published before the start of the study.¹⁷ Right and left common cIMTs were imaged longitudinally 1 cm proximal to the carotid bifurcation with the transducer placed both in the lateral and anterior-posterior windows. Three 5-sec acquisitions were recorded, and three magnified end-diastolic frames of the far wall were selected and analyzed at each position (Figure 1). All studies were read offline by a single physician blinded to the clinical and laboratory data using QLAB version 8.1 (Phillips Medical Systems, Bothell, WA) with automatic detection of cIMT by the software (Figure 2). For each subject, the mean cIMT was calculated as the average of the 12 measurements from the left and right common carotid arteries (3 frames for each position × 2 positions × 2 carotid arteries = 12 measurements). A subgroup of 30 studies (the initial 15 and the final 15) was reanalyzed at a 4-week time interval to assess for intraobserver and interobserver

protocol was approved by the institutional review board. Informed consent was obtained from the parents or legal guardians of minors or from participants aged ≥ 18 years.

Subject Population

Patients were recruited from the Medical University of South

variability. All 12 measurements were repeated and averaged. Observers were free to choose the image and frame to remeasure.

Calculations

BMI was calculated as weight (kg)/height² (m²). Lean BMI was calculated as lean body mass (kg)/height² (m²) and fat mass index as fat mass (kg)/height² (m²). Body surface area was calculated using the method of Haycock *et al.*¹⁸ as $0.024265 \times \text{height}^{0.3964} \times \text{weight}^{0.5378}$. The quantitative insulin sensitivity check index (QUICKI) was calculated as $1/(\log[\text{fasting insulin } (\mu\text{U/mL})] + \log[\text{fasting glucose } (\text{mg/dL})])$.¹⁹ Insulin level was divided dichotomously as normal (< 20 μIU/mL) or abnormal (≥ 20 μIU/mL).

Statistical Analysis

To assess for differences between white and black patients, two-group *t* tests were used for parametric data, and Mann-Whitney *U* tests were used for nonparametric data. Simple linear regression was used to assess the individual effects of cardiovascular risk factors on cIMT. Multivariate regression was used to model the relationship between two or more independent variables and cIMT. Intraobserver and interobserver variability was assessed using intraclass correlation coefficients using a random-effects model measuring absolute agreement. On the basis of clinical relevance and previous studies investigating the correlation of lean body mass to cIMT, an effect size of $r = 0.25$ was chosen to base the sample-size calculation.²⁰ This resulted in a sample size of 120 subjects, giving a power of 80% at $\alpha = 0.05$ to detect the chosen effect size. All statistical analyses were performed using SPSS Statistics version 20 (IBM, Armonk, NY).

RESULTS

From September 2009 to December 2011, 142 patients were eligible for inclusion. Nineteen declined participation, and three met exclusion criteria. Therefore, 120 obese children (46 white [72% female] and 74 black [64% female]) were enrolled. Figure 3 demonstrates the age distribution of subjects. Differences by race in clinically derived anthropometrics and laboratory data can be found in Table 1. Five patients were on antihypertensive medicines. Eight other patients had blood pressure values above the 95th percentile for age, sex, and height at the time of the visit without the diagnosis of hypertension. No patients were diagnosed with diabetes mellitus. Two patients were smokers. Black patients had higher insulin levels and evidence of insulin resistance by QUICKI compared with white patients, whereas white patients had increased triglycerides compared with blacks. Body composition and cIMT results are summarized in Table 2. Intraobserver and interobserver variability for cIMT measures had intraclass correlation coefficients of $r = 0.92$ and $r = 0.86$, respectively. Although BMI was higher in black subjects than in white subjects by about 13%, fat mass index and percentage body fat were not significantly different between groups. This was consistent with the finding that lean body mass was significantly higher in black subjects by almost 16%. Also, black patients demonstrated higher cIMT compared with white patients. There were no statistically significant differences in anthropomorphic, laboratory, or imaging data between men and women.

Simple linear regression analysis revealed modest associations between mean cIMT and race ($r = 0.52$, $P < .01$), systolic blood pressure ($r = 0.46$, $P < .01$), and lean body mass ($r = 0.51$, $P < .01$)

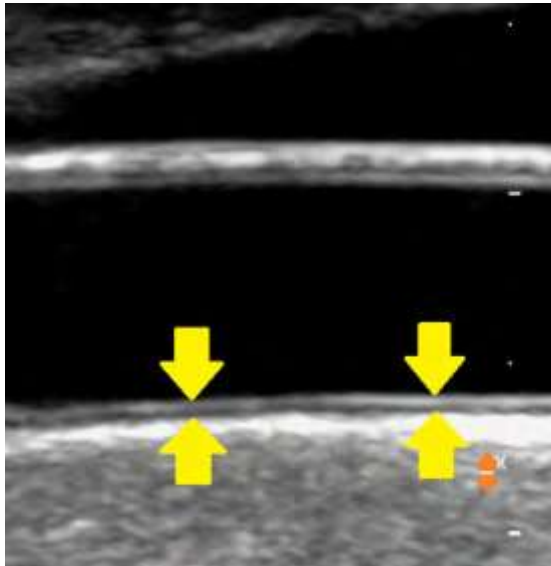


Figure 1 Common carotid artery ultrasound. Representative still frame at end-diastole from a right common carotid artery 1 cm below the carotid bifurcation with the ultrasound beam directed anterior to posterior. The yellow arrows bracket the intima-media of the far wall of the common carotid artery, where measurements will be made. The distance between the depth markers (major and minor hash marks) to the right of the figure is 5 mm. The two orange opposing triangles indicate the focal depth.

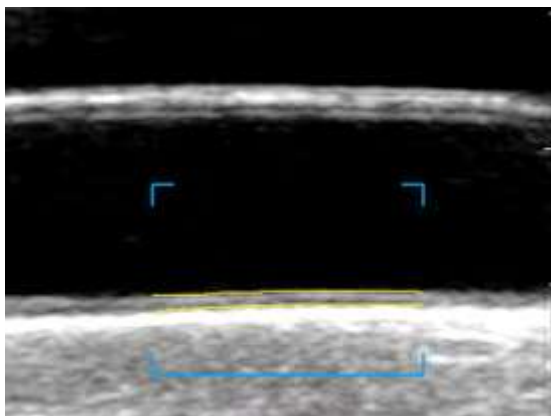


Figure 2 Measurement of cIMT. This figure shows the offline software analysis of the common carotid ultrasound from Figure 1. The software requires the user to manually place a blue box 1 cm in length over the far wall of the carotid artery. The software then automatically traces the intima-media borders (yellow lines). The reported carotid-intima media thickness in this patient was 0.51 mm. The distance between the depth markers (major and minor hash marks) to the right of the figure is 5 mm.

(Figure 4). Age, height, diastolic blood pressure, LDL level, ratio of total cholesterol to high-density lipoprotein, high-sensitivity C-reactive protein, QUICKI, total body fat, and percentage body fat did not demonstrate any associations with mean cIMT. Variables that

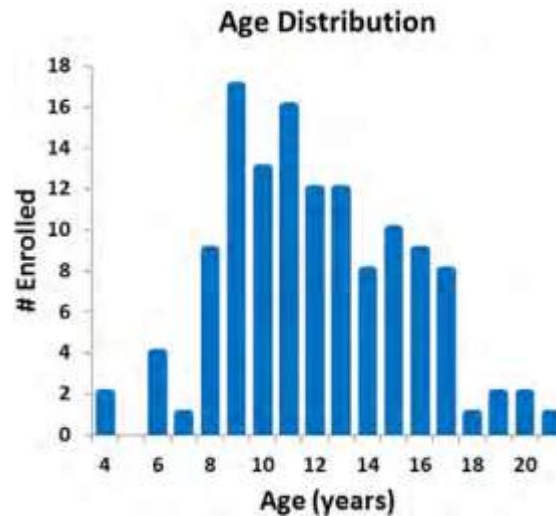


Figure 3 Age distribution of subjects.

showed statistically significant relationships with cIMT after simple linear regression and variables that have been associated with cIMT in previous studies were included in a multivariate regression analysis.^{21,22} These variables were race, age, high-sensitivity C-reactive protein, QUICKI, LDL, systolic blood pressure, and lean body mass. Then, a second multivariate regression analysis was performed with only those variables that showed statistically significant relationships with cIMT (race, systolic blood pressure, and lean body mass). Lean body mass remained the only measure with a statistically significant relationship with mean cIMT in both analyses ($P < .01$ and $P < .01$, respectively). Another reduced model with only race and lean body mass was then created. Again, only lean body mass had a statistically significant relationship with cIMT ($P < .01$). No variables showed collinearity with race (variance inflation factors for all variables and interaction terms < 5). Comprehensive results of the simple and multiple variable linear regression are presented in Table 3.

DISCUSSION

There are two primary findings from this study. First, black obese children exhibit higher cIMT compared with white children. Second, higher cIMT in black obese children is associated with the differences in lean body mass between groups.

Black adults have higher cIMT than white adults.⁷⁻¹⁰ Healthy nonobese children exhibit similar racial differences.¹⁵ The present study shows that similar racial differences in cIMT exist in obese children. Obese black participants had a higher cIMT compared with whites. Studies have shown that blood pressure, race, BMI, and body fat are associated with increased cIMT in children.^{21,22} Some have hypothesized that the racial differences in these cardiovascular risk factors contribute to the differences seen in cIMT and hence to the racial differences in cardiovascular outcomes.¹⁵ However, in the present study, groups did not differ in age, height, blood pressure, high-density lipoprotein, LDL, or percentage body fat. Although the groups did differ in insulin level and insulin resistance, these risk factors did not appear to be associated with cIMT.

We found an association between lean body mass and cIMT in obese children. This is similar to what has been found in healthy adults

Table 1 Differences by race in clinically derived anthropometrics and laboratory data

Measure	White	Black	P value (t test or Mann-Whitney U test)
Age (y)	12.5 ± 3.6	11.8 ± 3.3	.30
Height (cm)	158 ± 12.8	155 ± 13.7	.30
Weight (kg)	79.5 ± 25.7	88.1 ± 32.3	.13
Body surface area (m ²)	1.8 ± 0.3	1.9 ± 0.4	.43
Systolic blood pressure (mm Hg)	113 ± 13	112 ± 17	.63
Diastolic blood pressure (mm Hg)	63 ± 8	61 ± 9	.15
Insulin (μIU/mL)	22 (7–119)	28 (11–116)	.03
Glucose (mg/dL)	91 ± 7.6	92 ± 8.2	.53
QUICKI	0.30 ± 0.03	0.29 ± 0.02	.02
LDL (mg/dL)	103 ± 24	104 ± 24	.73
High-density lipoprotein (mg/dL)	41 ± 11	42 ± 9.2	.49
Triglycerides (mg/dL)	95 (32–297)	65 (29–175)	<.01
High-sensitivity C-reactive protein (mg/dL)	0.25 (0.02–2.41)	0.38 (0.01–1.98)	.11

Data are expressed as mean ± SD for normally distributed data and as median (range) for data not normally distributed.

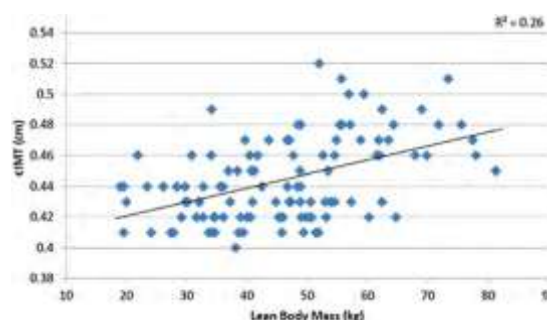
Table 2 Differences by race in body composition and cIMT

Measure	White	Black	P value (t test)
BMI (kg/m ²)	31.2 ± 7.4	35.3 ± 8.9	.01
Lean BMI (kg/m ²)	17.3 ± 3.2	19.3 ± 3.4	.02
Fat mass index (kg/m ²)	13.0 ± 4.3	14.3 ± 4.6	.13
Percentage body fat	41 ± 4.8	41 ± 5.5	.60
Mean cIMT (cm)	0.43 ± 0.02	0.45 ± 0.03	<.01

Data are expressed as mean ± SD.

and in obese women with polycystic ovarian syndrome.^{20,23} The proposed explanation behind this association is based on the linear relationship between the size of cardiovascular structures and cardiac output. As the amount of metabolically active tissue (lean body mass) increases, oxygen demand increases. This leads to an increase in cardiac output and thus an increase in cIMT. Therefore, increases in cIMT may be in part reflective of increased somatic growth. For example, one group found a linear relationship between common carotid diameter and cIMT with normal shear-stress relationships indicating that, at specific cIMT ranges, increased cIMT reflects an adaptive response to increased flow instead of atherosclerosis.²⁴ Our finding that race and blood pressure do not independently associate with cIMT may be because both are related to lean body mass. For example, black patients are known to have higher lean body mass than white patients at similar BMIs.^{21,25} Also, lean body mass has been proposed as a more significant predictor of blood pressure than traditional cardiovascular risk factors.²⁶ Thus, while recognizing that cross-sectional associations do not amount to causality, it is conceivable that the differences in cIMT between obese white and black children may be due in part to the differences seen in lean body mass between the groups and may not necessarily represent increased atherosclerotic burden. In fact, in adults, black patients have been shown to have higher cIMT despite showing lower coronary calcium levels than whites.²⁷

In similar fashion, multiple studies have associated obesity (as defined by elevated BMI percentiles) with higher cIMT values in children.^{28–31} These studies are limited by their inability to analyze the body composition of their subjects. In the present study, fat mass as

**Figure 4** Linear regression plot demonstrating the association of lean body mass with cIMT.

measured by dual-energy x-ray absorptiometry had no relationship to cIMT. This may be because fat mass is metabolically inert, requiring little change in cardiac output, and thus has an insignificant relationship to the size of cardiovascular structures such as cIMT. It is well known that obese children have higher fat mass than their normal-weight counterparts, but they also exhibit higher lean body mass.²⁵ Hence, lean body mass may have contributed more to the increased cIMT than fat mass in these previous studies. It may be useful for future studies to compare cIMT in children with similar LBM but different levels of adiposity to further quantify adiposity's influence on atherosclerotic burden.

Carotid intima-media thickness is a surrogate for cardiovascular disease risk.⁴ Groups have investigated racial differences in cIMT in adults and healthy children in an attempt to identify modifiable risk factors that may predispose black patients to a higher incidence of cardiovascular disease.^{4,15} The utility of performing this analysis in the pediatric population is unknown because prospective studies establishing pediatric cIMT as a useful predictor of cardiovascular outcomes have not been performed. It is probably fair to observe that the likelihood of significant "atherosclerotic burden" in healthy children is small. Therefore, we studied obese pediatric patients: those with a theoretically higher risk for atherosclerosis. Even so, we found no relationship between cIMT and cardiovascular risk factors, such as race, after lean body mass was accounted for. We feel that this study neither supports nor detracts from the use of

Table 3 Results of simple and multivariate linear regression analysis

Model	Variable	B	SE	β	t	P	F	R	R ²
Simple linear regression									
LBM						<.01	38.70	0.51	0.26
	Constant	0.397	0.008		51.88	<.01			
	LBM	0.001	<0.001	0.51	6.221	<.01			
Race						<.01	30.21	0.46	0.21
	Constant	0.326	0.021		15.33	<.01			
	Race	0.001	<0.001	0.46	5.50	<.01			
SBP						<.01	34.51	0.52	0.27
	Constant	0.391	0.010		39.36	<.01			
	SBP	0.035	0.006	0.52	5.87	<.01			
Multivariate linear regression									
Model 1						<.01	6.23	0.55	0.30
	Constant	0.379	0.049		7.74	<.01			
	LBM	0.001	<0.001	0.48	3.06	<.01		0.51	
	Race	0.008	0.004	0.17	1.95	.05		0.19	
	SBP	<0.001	<0.001	0.08	0.80	.43		0.31	
	Age	<0.001	0.001	-0.4	-0.27	.78		0.32	
	LDL	<0.001	<0.001	-0.10	-1.19	.24		-0.19	
	QUICKI	0.017	0.116	0.0	0.15	.88		-0.23	
	hsCRP	-0.002	0.006	-0.03	-0.37	.72		0.08	
Model 2						<.01	14.71	0.54	0.29
	Constant	0.363	0.021		17.54	<.01			
	LBM	<0.001	<0.001	0.44	4.81	<.01		0.51	
	Race	0.007	0.004	0.15	1.90	.06		0.18	
	SBP	<0.001	<0.001	0.12	1.30	.20		0.32	
Model 3						<.01	21.32	0.53	0.28
	Constant	0.286	0.010		40.18	<.01			
	LBM	0.001	<0.001	0.50	6.15	<.01		0.51	
	Race	0.007	0.004	0.15	1.78	.08		0.18	

hsCRP, High-sensitivity C-reactive protein; LBM, lean body mass; SBP, systolic blood pressure.
P values < .05 were considered significant.

cIMT in the obese pediatric population when assessing for racial differences in cardiovascular disease risk. However, despite scatter in the relationship between cIMT and lean body mass, we feel that this study supports the inclusion of measures of body composition in future studies assessing the association of cardiovascular disease risk factors, including race, to cIMT in obese children.

Normal values for cIMT in nonobese children may not be appropriate standards for which to compare cIMT values in obese patients because of their increased lean body mass. However, the development of cIMT reference values on the basis of an obese population is unappealing because of the possibility of underestimating cardiovascular risk. Alternatively, it may be prudent to index cIMT to lean body mass to make comparisons between obese and nonobese patients viable, as has been suggested for other cardiovascular structures such as left ventricular mass.³² Further investigation of validated sex-specific formulas to calculate lean body mass may aid in accounting for lean body mass in future studies.³³

Black subjects did demonstrate small but statistically significant elevations in insulin levels and insulin resistance than white subjects. This is consistent with previous studies in adults and children.^{15,34-36} These findings were not associated with increased cIMT, but they may be contributors to the racial differences that are encountered in cardiovascular disease outcomes in adults.^{37,38} Further investigations aimed at identifying the etiologic factors contributing to the racial differences in these pediatric cardiovascular risk factors are warranted.

There were limitations to this study. The lack of a control group and the cross-sectional nature of the study do not allow extrapolation of these data to other populations, such as nonobese children. Furthermore, it is difficult to compare the cIMT values in this obese population with those in other studies attempting to establish reference cIMT values in normal children because of the wide variability in methods and results. For example, the mean cIMT values in this study population were, as expected, greater than the reference values produced by Jourdan *et al.*³⁹ but are smaller than those reported by Sass *et al.*⁴⁰ The patient sample included subjects over a wide age range who had varying cardiovascular risk-factor exposure time. The ability to account for the effect of risk-factor exposure time on cIMT was inhibited by the cross-sectional nature of this study. It is conceivable that the effect of lean body mass becomes less significant and the effects of cardiovascular risk factors become more significant over time as the atherosclerotic process advances. The relationship of cardiovascular risk factors to cIMT may be more evident with a larger, more balanced sample size.

CONCLUSIONS

Black subjects demonstrated greater cIMT than white subjects. The relationship between race and cIMT disappeared when lean body

mass was accounted for. Because lean body mass, not intrinsic racial factors, appeared to explain the difference in cIMT found in this study, assessment of lean body mass should be included in future studies of the association of cardiovascular risk factors with cIMT in obese children.

REFERENCES

- Feinstein M, Ning H, Kang J, Bertoni A, Carnethon M, Lloyd-Jones DM. Racial differences in risks for first cardiovascular events and noncardiovascular death: the Atherosclerosis Risk in Communities study, the Cardiovascular Health Study, and the Multi-Ethnic Study of Atherosclerosis. *Circulation* 2012;126:50-9.
- Pickle LW, Mungiole M, Gillum RF. Geographic variation in stroke mortality in blacks and whites in the United States. *Stroke* 1997;28:1639-47.
- Howard G, Howard VJ, Katholi C, Oli MK, Huston S. Decline in US stroke mortality: an analysis of temporal patterns by sex, race, and geographic region. *Stroke* 2001;32:2213-20.
- Lorenz MW, Markus HS, Bots ML, Rosvall M, Sitzer M. Prediction of clinical cardiovascular events with carotid intima-media thickness: a systematic review and meta-analysis. *Circulation* 2007;115:459-67.
- O'Leary DH, Polak JF, Kronmal RA, Manolio TA, Burke GL, Wolfson SK Jr, Cardiovascular Health Study Collaborative Research Group. Carotid-artery intima and media thickness as a risk factor for myocardial infarction and stroke in older adults. *N Engl J Med* 1999;340:14-22.
- Hodis HN, Mack WJ, LaBree L, Selzer RH, Liu CR, Liu CH, et al. The role of carotid arterial intima-media thickness in predicting clinical coronary events. *Ann Intern Med* 1998;128:262-9.
- Manolio TA, Burke GL, Psaty BM, Newman AB, Haan M, Powe N, et al., CHS Collaborative Research Group. Black-white differences in subclinical cardiovascular disease among older adults: the Cardiovascular Health Study. *J Clin Epidemiol* 1995;48:1141-52.
- D'Agostino RB, Burke G, O'Leary D, Rewers M, Selby J, Savage PJ, et al. Ethnic differences in carotid wall thickness. The Insulin Resistance Atherosclerosis Study. *Stroke* 1996;27:1744-9.
- Schreiner PJ, Heiss G, Tyroler HA, Morrisett JD, Davis CE, Smith R. Race and gender differences in the association of Lp(a) with carotid artery wall thickness. The Atherosclerosis Risk in Communities (ARIC) Study. *Arterioscler Thromb Vasc Biol* 1996;16:471-8.
- Li R, Duncan BB, Metcalfe PA, Crouse JR III, Sharrett AR, Tyroler HA, et al., Atherosclerosis Risk in Communities (ARIC) Study Investigators. B-mode-detected carotid artery plaque in a general population. *Stroke* 1994;25:2377-83.
- Cappuccio FP, Cook DG, Atkinson RW, Strazullo P. Prevalence, detection, and management of cardiovascular risk factors in different ethnic groups in south London. *Heart* 1997;78:555-63.
- Chaturvedi N, McKeigue PM, Marmot MG. Resting and ambulatory blood pressure differences in Afro-Caribbeans and Europeans. *Hypertension* 1993;22:90-6.
- Cruickshank JK, Mzayek F, Liu L, Kieltyka L, Sherwin R, Webber LS, et al. Origins of the 'black/white' difference in blood pressure: roles of birth weight, postnatal growth, early blood pressure, and adolescent body size: the Bogalusa Heart Study. *Circulation* 2005;111:1932-7.
- Ford ES, Li C, Imperatore G, Cook S. Age, sex, and ethnic variations in serum insulin concentrations among US youth: findings from the National Health and Nutrition Examination Survey 1999-2002. *Diabetes Care* 2006;29:2605-11.
- Whincup PH, Nightingale CM, Owen CG, Rapala A, Bhowruth DJ, Prescott MH, et al. Ethnic differences in carotid intima-media thickness between UK children of black African-Caribbean and white European origin. *Stroke* 2012;43:1747-54.
- Stein JH, Korcarz CE, Hurst RT, Lonn E, Kendall CB, Mohler ER, et al. Use of carotid ultrasound to identify subclinical vascular disease and evaluate cardiovascular disease risk: a consensus statement from the American Society of Echocardiography Carotid Intima-Media Thickness Task Force. Endorsed by the Society for Vascular Medicine. *J Am Soc Echocardiogr* 2008;21:93-111.
- Dogan S, Plantinga Y, Crouse JR III, Evans GW, Raichlen JS, O'Leary DH, et al. Algorithms to measure carotid intima-media thickness in trials: a comparison of reproducibility, rate of progression and treatment effect. *J Hypertens* 2011;29:2181-93.
- Haycock GB, Schwartz GJ, Wisotsky DH. Geometric method for measuring body surface area: a height-weight formula validated in infants, children, and adults. *J Pediatr* 1978;93:62-6.
- Katz A, Nambi SS, Mather K, Baron AD, Follmann DA, Sullivan G, et al. Quantitative insulin sensitivity check index: a simple, accurate method for assessing insulin sensitivity in humans. *J Clin Endocrinol Metab* 2000;85:2402-10.
- Kozakawa M, Palombo C, Paterni M, Anderwald CH, Konrad T, Colgan MP, et al. Body composition and common carotid artery remodeling in a healthy population. *J Clin Endocrinol Metab* 2008;9:3325-32.
- Litwin M, Niemirska A. Intima-media thickness measurements in children with cardiovascular risk factors. *Pediatr Nephrol* 2009;24:707-19.
- Mittelman SD, Gilsanz P, Mo AO, Wood J, Dorey F, Gilsanz V. Adiposity predicts carotid intima-media thickness in healthy children and adolescents. *J Pediatr* 2010;156:592-7.
- Carmina E, Guastella E, Longo RA, Rini GB, Lobo RA. Correlates of increased lean muscle mass in women with polycystic ovary syndrome. *Eur J Endocrinol* 2009;161:583-9.
- Bots ML, Hofman A, Grobbee DE. Increased common carotid intima-media thickness. Adaptive response or a reflection of atherosclerosis? Findings from the Rotterdam Study. *Stroke* 1997;28:2442-7.
- Wagner DR, Heyward VH. Measures of body composition in blacks and whites: a comparative review. *Am J Clin Nutr* 2000;71:1392-402.
- Duncan MJ, James L, Griffiths L. The relationship between resting blood pressure, body mass index and lean body mass index in British children. *Ann Hum Biol* 2011;38:324-9.
- Manolio TA, Arnold AM, Post W, Bertoni AG, Schreiner PJ, Sacco RL, et al. Ethnic differences in the relationship of carotid atherosclerosis to coronary calcification: the Multi-Ethnic Study of Atherosclerosis. *Atherosclerosis* 2008;197:132-8.
- Woo KS, Chook P, Yu CW, Sung RY, Qiao M, Leung SS, et al. Overweight in children is associated with arterial endothelial dysfunction and intima-media thickening. *Int J Obes Relat Metab Disord* 2004;28:852-7.
- Meyer AA, Kundt G, Steiner M, Schuff-Werner P, Kienast W. Impaired flow-mediated vasodilation, carotid artery intima-media thickening, and elevated endothelial plasma markers in obese children: the impact of cardiovascular risk factors. *Pediatrics* 2006;117:1560-7.
- Retnakaran R, Zinman B, Connelly PA, Harris SB, Hanley AJ. Non-traditional cardiovascular risk factors in pediatric metabolic syndrome. *J Pediatr* 2006;148:176-82.
- Roh EJ, Lim JW, Ko KO, Cheon EJ. A useful predictor of early atherosclerosis in obese children: serum high-sensitivity C-reactive protein. *J Korean Med Sci* 2007;22:192-7.
- Foster BJ, Gao T, Mackie AS, Zemel BS, Ali H, Platt RW, et al. Limitations of expressing left ventricular mass relative to height and to body surface area in children. *J Am Soc Echocardiogr* 2013;26:410-8.
- Foster BJ, Platt RW, Zemel BS. Development and validation of a predictive equation for lean body mass in children and adolescents. *Ann Hum Biol* 2012;39:171-82.
- Golden SH, Brown A, Cauley JA, Chin MH, Gary-Webb TL, Kim C, et al. Health disparities in endocrine disorders: biological, clinical, and nonclinical factors—an Endocrine Society scientific statement. *J Clin Endocrinol Metab* 2012;97:E1579-639.
- Au LE, Economos CD, Goodman E, Houser RF, Must A, Chomitz VR, et al. Dietary intake and cardiometabolic risk in ethnically diverse urban schoolchildren. *J Acad Nutr Diet* 2012;112:1815-21.
- Lin SX, Pi-Sunyer EX. Prevalence of the metabolic syndrome among US middle-aged and older adults with and without diabetes—a preliminary analysis of the NHANES 1999-2002 data. *Ethn Dis* 2007;17:35-9.

37. Nazmi A, Victora CG. Socioeconomic and racial/ethnic differentials of C-reactive protein levels: a systematic review of population-based studies. *BMC Public Health* 2007;7:212.
38. Meadows TA, Bhatt DL, Cannon CP, Gersh BJ, Röther J, Goto S, et al. Ethnic differences in cardiovascular risks and mortality in atherothrombotic disease: insights from the Reduction of Atherothrombosis for Continued Health (REACH) registry. *Mayo Clin Proc* 2011;86: 960-7.
39. Jourdan C, Wühl E, Litwin M, Fahr K, Trelewicz J, Jobs K, et al. Normative values for intima-media thickness and distensibility of large arteries in healthy adolescents. *J Hypertens* 2005;23:1707-15.
40. Sass C, Herbeth B, Chapel O, Siest G, Visvikis S, Zannad F. Intima-media thickness and diameter of carotid and femoral arteries in children, adolescents and adults from the Stanislas cohort: effect of age, sex, anthropometry and blood pressure. *J Hypertens* 1998;16: 1593-602.

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Appendix G

Detailed results for the SE VIEW Lean Team project.

Results

JROTC instructors (94% male/6% female) were classified using adult standards into three categories from the following references and tables: Healthy, Overweight and Obese based on their BMI¹ Healthy was defined as BMI 18.5- 24.9; Overweight defined as BMI of 25.0-29.9; Obese I as BMI 30.0-34.9; Obese II as 35.0-39.9 and Obese III as BMI >40.0. Age-Adjusted Body Fat Percentage Recommendations for adults are divided into 4 categories; Underfat, Healthy, Overweight, Obese ² (see tables below).

Women

Age	Underfat	Healthy Range	Overweight	Obese
20-40 yrs	Under 21%	21-33%	33-39%	Over 39%
41-60 yrs	Under 23%	23-35%	35-40%	Over 40%
61-79 yrs	Under 24%	24-36%	36-42%	Over 42%

Men

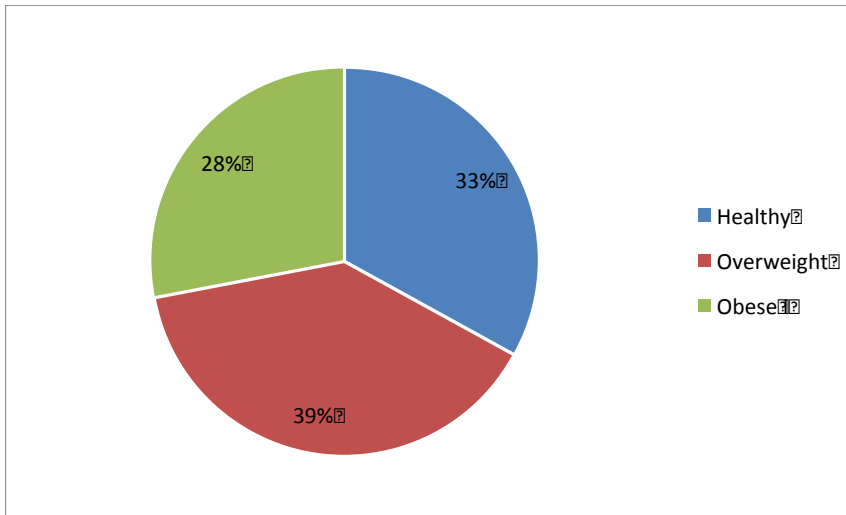
Age	Underfat	Healthy Range	Overweight	Obese
20-40 yrs	Under 8%	8-19%	19-25%	Over 25%
41-60 yrs	Under 11%	11-22%	22-27%	Over 27%
61-79 yrs	Under 13%	13-25%	25-30%	Over 30%

JROTC Instructors (n=17)	Mean BMI
White	29.0 (±5.1)
Black	26.1(±2.5)
Hispanic	N/A

Instructor BMI Classification Survey 1

¹ World Health Organization (WHO), Classification of Body Mass Index in Adults, 2004

² Gallagher et al. Am J Clin Nut 2000; 72:694-701



% Body Fat by BMI classification correctly identified the adults as Healthy, Overweight or Obese. Analysis of variance showed significant differences in Mean % BF between obese and healthy teachers ($p=0.01^*$). Further analysis of Predictive Positive Value (PPV) of BMI to % Body Fat is pending.

JROTC Instructors (n=18; age = mean age = 53.3 yrs)	Mean % BF
Healthy*	20.4 (± 4.9)
Overweight	26.4 (± 5.7)
Obese*	31.8 (± 5.1)

Body Mass Index for Children (ages 2-20 years) is calculated the same way as adults but the values are compared to those of other children the same age, known as the Z-score. BMI percentiles are used to categorize children of the same age and sex.³ These percentiles are categorized into Underweight ($< 5^{\text{th}}$), Healthy ($5^{\text{th}}-84^{\text{th}}$), Overweight ($85^{\text{th}}-94^{\text{th}}$), and Obese ($>95^{\text{th}}$).

Survey Group N=785	% Healthy		% Overweight/Obese or Overfat		p-value*
	BMI	Body Fat	BMI	Body Fat	
Total	44%	61%	56%	26%	
Boys*	49%	53%	51%	23%	* $p<0.05$ for both BMI and % body fat
Girls	40%	67%	60%	30%	
AA*	41%	57%	59%	27%	* $p<0.05$ for both BMI and % body fat
White	55%	67%	45%	24%	
Hispanic	24%	65%	76%	30%	

³ Center for Disease Control (CDC), Body Mass Index for Children ages 2-20 years, 2000

9 th grade	47%	60%	53%	28%	
10 th grade	44%	66%	56%	25%	
11 th grade	42%	58%	58%	24%	
12 th grade	42%	55%	58%	26%	
Exercise <3days**	43%	60%	57%	31%	** p< 0.05 for % body fat

BMI %	Body Fat %*	Weight Status
< 5%	< 5%	Underweight
5-84%	5-84%	Healthy
≥85 – 94%	≥ 85%	Overweight
≥ 95%	≥ 85%	Obese
* No separate categorization for overweight or obese		

Of significance this past year was determining that BMI as a single measure of weight status in adolescents may not accurately reflect obesity defined as “Overfatness”. Preliminary analysis led us to suspect that many of the students measured were classified as Overweight and Obese despite the fact that they did not appear to be Overfat nor did they perceive themselves as Overfat on our lifestyle survey. We measured the % Body Fat of our student subjects and found much overlap of Body Fat values within BMI categories for Healthy, Overweight and Obese. We had trouble finding standardized tables for % Body Fat ranges in youth. We examined this overlap data and looked at sensitivity and specificity of BMI and calculated the Positive Predictive Value (PPV) of BMI relative to % Body Fat. Our students were classified into weight status categories by % body fat percentiles based on data from a Texas study with a similar age and gender cohort.⁴

⁴ Mueller WH, Harris RB, Doyle SR, Labarthe DR. Am J Hum Biol 16:135-150 (2004). Percentiles of body composition from bioelectrical impedance and body measurements in U.S. adolescents 8-17 years old: project Heart Beat! (<http://www.ncbi.nlm.nih.gov/pubmed/14994313>)

- Agreement between weight classification using BMI compared to body fat was best for the healthy category (57-81%), followed by obese (51-63%), and lowest for overweight (0-9%), depending on subject variables.
- BMI is a sensitive test for diagnosis of overweight/obesity (sensitivity=0.975) but not very specific (specificity=0.54) with a low positive predictive value (0.48).
- The positive predictive value of BMI as a test to diagnose overweight/obesity decreases when BMI % is >75 to <95.

Results indicated that at mid range of BMI percentiles (75th-90th) the PPV was markedly poor, 0.02 compared to 1.0, which would be perfect agreement. Our plan is to do further analyze of the data by gender and race to see if additional differences or agreements can be found.

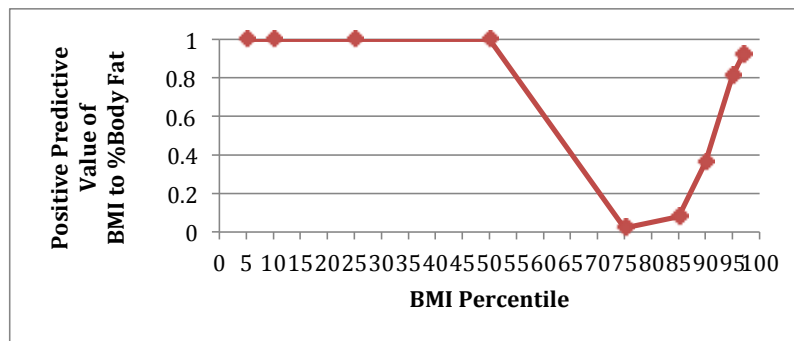
Sensitivity, Specificity and Positive Predictive Value (PPV)
of BMI in diagnosis of Overfat (Overweight/Obese):

	POSTIVE TEST (Overweight/Obese BMI)	NEGATIVE TEST (Healthy BMI)
DISEASE (Overfat % body fat)	195	5
NO DISEASE (Healthy % body fat)	208	245

$$\text{SENSITIVITY} = \frac{\text{TRUE POSITIVES}}{\text{TRUE POSITIVES} + \text{FALSE NEGATIVES}} = 0.975$$

$$\text{SPECIFICITY} = \frac{\text{TRUE NEGATIVES}}{\text{TRUE NEGATIVES} + \text{FALSE POSITIVES}} = 0.54$$

$$\text{POSITIVE PREDICTIVE VALUE} = \frac{\text{TRUE POSITIVES}}{\text{TRUE POSITIVES} + \text{FALSE POSITIVES}} = 0.48$$



Weight Status and Nutrition and Physical Activity Questionnaires:

Second assessment data on 489 students (62% of enrollees) from 4 schools (1 urban, 1 rural, 2 suburban) and 17 instructors (94% of enrollees) were completed. Second survey results for Instructors are pending.

Average time between surveys was 163 days (± 34.8 , range 89-405 days). There were no significant differences in gender or ethnicity between Survey 1 and Survey 2 for students.

Students Ethnicity & Gender	Survey 1 (n=784)	Survey 2 (n=489)	Survey 1 (n=784)	Survey 2 (n=489)
	Males	Males	Females	Females
Black	35%	38%	65%	62%
White	74%	74%	26%	26%
Hispanic	35%	45%	65%	55%
Other	47%	65%	53%	35%

Mean BMI's for Survey 2 were lower compared to Survey 1 [Mean BMI S1 = 24.5 (± 6.0); Mean BMI S2 = 24.1 (± 5.4)]. The BMI data was not normally distributed, so sign rank tests were used to determine whether the measures from survey 1 and survey 2 were different. The mean and median difference between BMI-1 and BMI-2 was 0.25. This was statistically significant, $p < 0.0001$. In addition, compared to Survey 1 results the classification of weight status based on BMI percentiles showed a higher percentage of Survey 2 students (57% versus 56%) were Healthy and fewer (23% versus 24%) were Obese. Further analysis is planned to compare first and second survey body fat percentages.

Students BMI	Survey 1 n=784	Survey 2 n=489	
Mean +std	24.5 (± 6.0)	24.1 (± 5.4)	$P < 0.001$
Healthy (10 th -85 th)	56%	57%	
Overweight (>85 th)	20%	20%	
Obese (>95 th)	24%	23%	

Nutrition, exercise, screen time and physical activity surveys (5-2-1-0 score) for all students regardless of weight category showed: No significant differences. Students still consumed inadequate servings of fruits and vegetables, exceeded 2 hours a day of screen time, failed to meet recommended minutes of daily physical and consumed too many sugared beverages. These results could be affected by readiness, which is often a factor in actual behavior change as well as affordability and access to foods and beverages⁵. Students indicated in the focus groups that better food choices were needed in schools and that healthy foods were not readily available and were often more expensive than processed or fast foods.

Students 5-2-1-0 behaviors	Survey 1 (n=784)	Survey 2 (n=489)	P-value*
5 or > servings of Fruit/Vegetables per day	52 (7%)	9 (6%)	NS
2 hours or < of screen time	213 (27%)	128 (26%)	NS
60 minutes/day exercise	306 (39%)	206 (42%)	NS
No sugared beverages in past 7 days	28 (4%)	18 (4%)	NS

*p-values based on paired t-tests of means⁵

Student perceptions of their weight status did not significantly change between Survey 1 and Survey 2. Students in the Healthy BMI category more accurately described their weight than their Overweight counterparts; lending more credence to the disagreement in BMI versus Overfatness in the mid-range of BMI (75th-90th percentile) results presented above.

⁵CC Wee, RB Davis, RS Phillips. Stage of readiness to control weight and adopt weight control behaviors in primary care. J Gen Intern Med; v.20(5); May 2005.

Self-described
Weight Status:

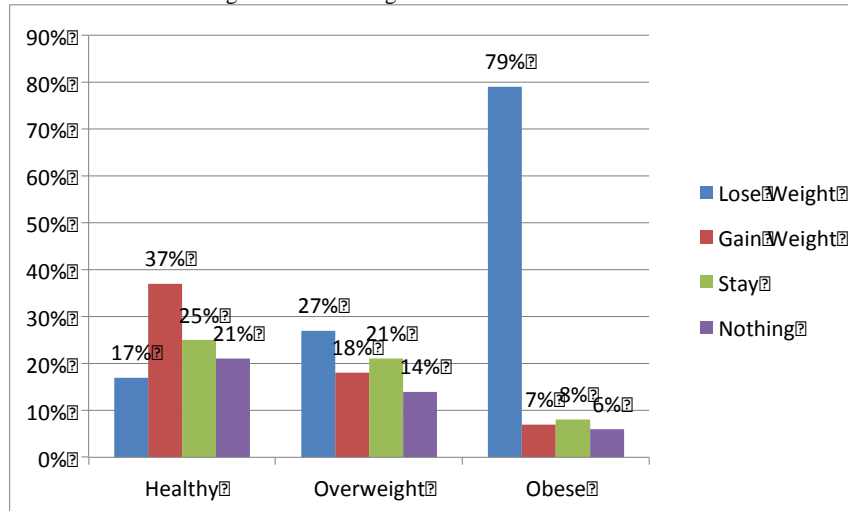
Survey 1	Described Weight				
BMI category	Very Underweight	Slightly Underweight	About the right size	Slightly Overweight	Very Overweight
Healthy	2%	23%	69%	5%	0%
Overweight	0%	7%	76%	15%	2%
Obese	0%	2%	29%	56%	12%

Self-described
Weight Status:

Survey 2	Described Weight				
BMI category	Very Underweight	Slightly Underweight	About the right size	Slightly Overweight	Very Overweight
Healthy	2%	20%	71%	7%	0%
Overweight	0%	2%	84%	14%	0%
Obese	1%	2%	29%	55%	14%

There were no significant differences found in what students were trying to do about their weight between Survey 1 and Survey 2 although in Survey 2 more of the students indicated they were trying to lose weight.

What students are doing about their weight: SURVEY1



What students are doing about their weight: SURVEY2

Appendix H

Key, J.D., King, L.A., Martin, C.T., & Slaughter, S.C. (2012, September). *Evaluation of weight status, % body fat and lifestyle behaviors in JROTC students*. Poster session presented at the Obesity Society Annual Conference, San Antonio, TX.

Evaluation of weight status, % body fat and lifestyle behaviors in JROTC students

Janice D. Key, MD*; Coleen T. Martin, MS, LD, RD*; Lydia King, PhD*; Sabra Slaughter, PhD**

*The Medical University of South Carolina Department of Pediatrics, **Office of the President

The Southeastern Virtual Institute for Health Equity and Wellness



BACKGROUND:

A 2010 report "Too Fat To Fight", stated that 75% of young adults are unable to qualify for the military. Obesity and the medical conditions it causes is the most common reason that recruits fail their enlistment physical examinations. The objectives of this study were to determine the prevalence of unhealthy weight (overweight/obesity, % body fat) and lifestyle behaviors among Junior Reserve Officers Training Corp (JROTC) students and to determine if these measures improve in older students (with participation in JROTC).

METHODS:

Design: A cross sectional study of JROTC students in all high schools (n=11) in the Charleston County School District

Measures: Height, weight, % body fat (using bioelectrical impedance device OMRON Model HBF-306C) and survey of behaviors using questions from CDC Youth Risk Behavior Survey (daily servings of fruits & vegetables, hours of screen time/day, hours of exercise /day and # of sugar sweetened drinks/day)

Analysis: Chi-square and t-tests were used to test significant differences. All analyses were conducted using SAS 9.3.

Acknowledgements:

This research and development project was conducted by the Medical University of South Carolina and is made possible by a cooperative agreement that was awarded and administered by the U.S. Army Medical Research and Materiel Command (USAMRMC) and the Telemedicine & Advanced Technology Research Center (TATRC), Fort Detrick, Maryland 21702, under Contract Numbers: W81XWH-10-2-0057 and W81XWH-11-2-0164.

This project was supported by the South Carolina Clinical & Translational Research (SCTR) Institute, with an academic home at the Medical University of South Carolina, through NIH Grant Numbers UL1 RR029882 and UL1 TR000062.

RESULTS:

Subjects =785 students (71% eligible subjects)

DEMOGRAPHIC INFORMATION FOR STUDENTS

Mean Age = 15.5 years (13-20)

Gender: 54% girls

Ethnicity: 28% White; 62% African-American; 6% Hispanic; 4% Other

Grade: 38% 9th; 27% 10th; 19% 11th; 16% 12th

Family Structure: 47% both parents; 33% mother; 6% grandparent; 4% father; 7% other

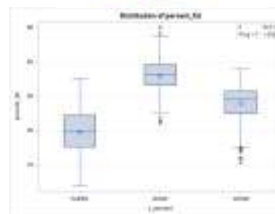
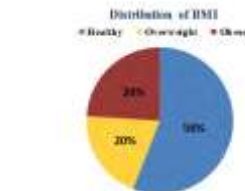
WEIGHT STATUS AND BODY FAT

Mean BMI = 24.6 (± 6.0)

Mean % Body Fat = 25.1% (± 9.1)

Variable	Mean BMI N=761	% Overweight /Obese N=761	% Body Fat N=758
Gender			
Girls	24.9	45%	26.6%
Boys	24.3	43%	23.3%
Ethnicity			
White	24.0	41%	23.7%
AA	25.0	46%	25.6%
Hispanic	24.1	40%	25.6%
Grade			
9 th	24.5	48%	25.0%
10 th	24.3	40%	25.0%
11 th	25.3	45%	25.4%
12 th	24.8	36%	25.2%
Family			
Both parents	23.9*	39%*	23.7%*
Single parent	25.2	49%	25.2%

* P <0.05



There was a significant difference in % body fat between BMI categories but with a large amount of overlap in standard deviation

5-2-1-NONE BEHAVIORS

5 or more fruits/vegetables/day	7%
2 hours or less screen time/day	17%
1 hour or more exercise/day	36%
No sugar sweetened drinks in past 7 days	4%

Number of 5-2-1-None Behaviors Achieved

None of the 4 criteria	42%
1 of the 4 criteria	40%
2 of the 4 criteria	15%
3 of the 4 criteria	2%
4 of the 4 criteria	<1% (1 student)



LIMITATIONS:

- (1) Body fat measurements were not precise as the impedance device was not calibrated for adolescents < 18 years of age and is affected by hydration status.
- (2) Duration of JROTC participation (# years or semesters) was not determined by the survey

CONCLUSIONS:

- (1) Many students are overweight/obese with unhealthy lifestyles and remain unhealthy through high school despite the fact that JROTC includes nutrition education and physical activity
- (2) Prevalence of overweight/obesity tended to decrease rather than increase by grade which may indicate effect of JROTC
- (3) Variation in % body fat may indicate BMI is not an accurate measurement of obesity in physically active students

Appendix I

Health & Social Work Advance Access published February 7, 2013

Unequal Burden of Disease, Unequal Participation in Clinical Trials: Solutions from African American and Latino Community Members

Marvella E. Ford, Laura A. Siminoff, Elisabeth Pickelsimer, Arch G. Mainous, Daniel W. Smith, Vanessa A. Diaz, Lea H. Soderstrom, Melanie S. Jefferson, and Barbara C. Tilley

African Americans and Latinos are underrepresented in clinical trials. The purpose of this study was to elicit solutions to participation barriers from African Americans and Latinos. Fifty-seven adults (32 African Americans, 25 Latinos) ages 50 years and older participated. The Institute of Medicine's *Unequal Treatment* conceptual framework was used. Six racially/ethnically homogenous focus groups were conducted at five sites in three counties. Themes within groups and cross-cutting themes were identified. The NVIVO program was used for data classification. The data were reviewed for final coding and consensus. Shared solutions included addressing costs, recruiting in community contexts, conducting community and individualized patient education, and sharing patient safety information. Participants were unanimously in favor of clinical trials navigation recruitment interventions. Solutions specific to African Americans included diversifying research teams, recognizing past research abuses, and increasing community trust. Solutions specific to Latinos included providing low-literacy materials, providing Spanish-speaking clinicians and advocates, and clarifying that immigration status would neither be documented nor prevent participation. Solutions from African Americans and Latinos reflect their cultural backgrounds and historical experiences. The results suggest the importance of developing a tailored, barriers-focused navigation intervention to improve participation among diverse racial and ethnic populations.

KEY WORDS: *African American; clinical trials; Latino; solutions; underrepresentation*

Exciting new medical therapies for a number of diseases that disproportionately affect African Americans and Latinos are currently being developed and tested in clinical trials (Robinson & Trochim, 2007). Despite bearing an unequal burden of disease, African Americans and Latinos continue to be underrepresented in clinical trials research, even though the National Institutes of Health Revitalization Act of 1993 (P.L. 103-43) stipulating the participation of women and minority groups in research was created in 1993 and updated in 2001 (Pinsky et al., 2008). Insufficient representation of racially and ethnically diverse groups and women in clinical trials results in inequitable distribution of the risks and benefits of research participation and reduces the generalizability of trial results (Pinsky et al., 2008). Health disparities in the United States could be reduced if

targeted therapies were discovered that work equally well in all populations or work especially well in members of affected racial and ethnic groups.

The purpose of this study was to use qualitative data obtained via focus groups with African American and Latino adults ages 50 years and older to elicit potential solutions to the problem of low rates of participation of such populations in clinical trials research. The conceptual framework of the study was based on the Institute of Medicine (IOM) report *Unequal Treatment: Confronting Racial and Ethnic Disparities in Healthcare* (Smedley & Nelson, 2003), which identified three factors as major sources of racial and ethnic disparities in health outcomes: (1) characteristics of health care systems, (2) perceptions of and actual interactions with health care providers, and (3) preferences and attitudes of patients.

We applied IOM's conceptual framework to the arena of disparities in recruitment of diverse populations to clinical trials research by revising the wording of the IOM framework to refer to clinical trials research instead of to health care disparities. For example, in the framework, we replaced "health care systems" with "health care systems and study processes," "health care providers" with "researchers," and "patients" with "potential trial participants." The revised framework is depicted in Figure 1 and is described in the following sections. The conceptual framework is related to the systems approach in the field of social work, in which clients and their needs are related to a multilevel model of resources, systems, and institutions (Darnell, 2007; NASW, 2008).

CHARACTERISTICS OF HEALTH CARE SYSTEMS AND CHARACTERISTICS OF STUDY PROCESSES

Characteristics that influence participant recruitment include the extent to which clinical data collection occurs at times amenable to a working population, the content of the informed consent form being presented using language that is understandable to lay community members, and the ease of navigating the complex medical systems within which trial procedures often take place (Grunfeld, Zitzelsberger, Coristine, & Aspelund, 2009; Joseph & Dohan, 2009). Other characteristics of health care systems and study processes that affect trial participation include tight timelines for the amount of time that clinicians are expected to spend with each patient. For example, explaining complex trial procedures can take up to 45 minutes, which may have a negative impact on busy clinic schedules (Grunfeld et al., 2009; Joseph & Dohan, 2009).

CHARACTERISTICS OF RESEARCHERS

These characteristics affect participant recruitment. A study of clinician-researcher roles in the recruitment of underrepresented populations to clinical trials revealed that if clinician-researchers had negative perceptions of patients' ability to adhere to study protocols, they were less likely to refer those patients to clinical trials (Howerton et al., 2007). Doctor-patient communication barriers may be another reason why some clinician-researchers do not extend invitations to clinical trial enrollment to their underrepresented patients (Howerton et al., 2007). Physician recommendation is the primary reason cited by research participants for their decision to participate

in a trial (Daugherty et al., 1995; Eggle et al., 2008; Grunfeld et al., 2009; Jenkins & Fallowfield, 2000). Less educated patients may not feel empowered to initiate discussions with their doctors about clinical trials (Ford et al., 2011).

PREFERENCES AND ATTITUDES OF POTENTIAL TRIAL PARTICIPANTS

An attitude of trust in the health care system and trust in the physician plays a major role in potential participants' decisions to take part in a clinical trial (Corbie-Smith, Thomas, Williams, & Moody-Ayers, 1999; Ford, Alford, Britton, McClary, & Gordon, 2007; Swanson & Ward, 1995). Other preferences and attitudes include a desire to avoid the burden of extra procedures, fear of exposure to investigational treatment with potentially toxic side effects, negative perceptions of clinical trials, and negative perceptions of physicians' expertise (Grunfeld et al., 2009).

METHOD

Setting

We chose five sites in three South Carolina counties (Richland, Florence, and Charleston) to conduct focus group sessions with African Americans and Latinos. Three focus groups were conducted with African Americans in Columbia, Florence, and North Charleston (in Richland, Florence, and Charleston counties, respectively), and three Spanish-language focus groups with Latinos were conducted in Charleston, Columbia, and Johns Island (in Charleston, Richland, and Charleston counties, respectively) (see Table 1). The rationale for the selection of sites was to include the perspectives of community members representing different regions of the state.

Participants

Thirty-two African Americans and 25 Latinos participated in six racially and ethnically homogenous focus groups (three focus groups per racial or ethnic group). Participants were identified by a marketing firm that used magazine subscription lists, word-of-mouth referrals, and community advertisements to advertise the focus groups in each location to recruit participants. Marketing firm staff conducted a short eligibility screening interview with people who responded to the advertisements to ensure that they were African American or Latino and in the

Figure 1: Model Framework of Multilevel Factors Affecting Decision to Participate in a Clinical Trial

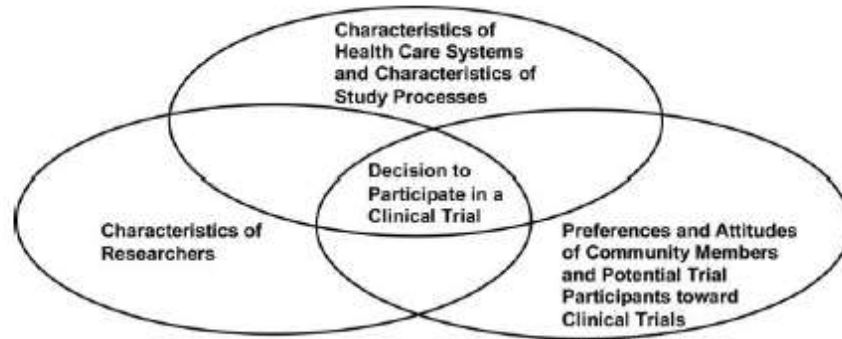


Table 1: Number of Focus Group Participants at Each Study Site

Focus Group Meeting Location	African American	Latino
Charleston, SC (Charleston County)		9
Columbia, SC (Richland County)	11	10
Florence, SC (Florence County)	10	
Johns Island, SC (Charleston County)		6
North Charleston, SC (Charleston County)	11	
Total	32	25

50- to 80-year-old age range. Eligible and interested people were sent a written confirmation of their focus group date, time, and location. Participants received a reminder call the night before their scheduled focus group session.

Focus Group Methods and Guiding Questions

We developed a two-page focus group interview guide to assess participants' perceptions of potential solutions to commonly cited barriers to clinical trial participation (see the Appendix). The focus groups with African Americans were conducted by Marvelle Ford, a female African American, and the focus groups with Latinos were conducted by Vanessa Diaz, a Latina.

The focus group structure followed Kohler et al.'s (1993) suggestion to include eight to 10 participants per group. Prior to each focus group, participants signed a consent form that explained the

purpose of the focus group and encouraged participants to speak freely. Confidentiality ground rules were laid. The groups began with an icebreaker in which each participant was asked to describe his or her dream vacation. Each two-hour session was audiotaped (Sim, 1998). Following the completion of each session, participants signed receipts and received \$50 gift cards as reimbursement for their time spent in the study.

Analysis

Content analysis centers on categorizing text to reduce and make sense of it. Our analysis used "manifest" content analysis, exploring usage of words or content by counting their frequencies, and "summative" content analysis, exploring the usage and underlying meanings of words or content by examining and interpreting the contexts in which they appear (Foreman & Damschroder, 2007). The NVIVO software program uses a systematic coding process to identify themes (Thom & Campbell, 1997). Statements were open-coded and grouped into conceptual categories, themes, or axial codes by authorial consensus (Bulmer, 1998; Nyamathi & Shuler, 1990; Thom & Campbell, 1997). Themes related to survey questions that were common across both racial and ethnic groups were identified, as were themes unique to a particular group. We identified both themes unique to a particular group and cross-cutting themes common in both racial and ethnic groups. NVIVO was used to classify the data. We iteratively reviewed the responses to develop the final codes and consensus. Laura A. Siminoff was the

primary coder, with ambiguous responses discussed by all of us. We did not calculate percent reliability but used a consensus method.

The content analysis was divided into three phases: (1) immersion, (2) reduction, and (3) interpretation (Foreman & Damschroder, 2007; Weber, 2008). Laura A. Siminof and a graduate assistant read and coded the transcripts to provide reliability. In the first phase, the transcripts of the focus groups and individual interviews were read, and notes were taken to capture and record recurring themes. The reduction phase consisted of selected word counts and counts of repetitive language use and reduction of the data into unique themes and subdomains (consisting of unique codes). A color-coding scheme was used to organize and track the data. The interviewer guide was used to help in searching for study-relevant themes even as we remained open to discovering new and unanticipated themes and subdomains. The extracted and reduced data were used in the interpretation phase to answer the study research questions.

RESULTS

The study results were organized as solutions to barriers related to each component of the revised IOM framework. The solutions are presented according to shared themes from both racial and ethnic groups, themes from the African American groups only, and themes from the Latino groups only. Each group was fairly evenly divided in terms of male and female representation.

Themes Common across All Participants

Characteristics of Health Care Systems and Characteristics of Study Processes: Costs Associated with Participation in Research. Participants reported being concerned about costs associated with study participation, including gas and hotel room costs, and the risks associated with driving long distances to the research sites. As a potential solution to the cost issue, universally, participants believed that these costs could be alleviated through fair compensation. One participant suggested that institutions conducting clinical trials could provide shuttle service for participants. Overwhelmingly, participants believed that trial meetings and appointments should be held at night or on weekends to minimize interference with participants' work schedules.

Characteristics of Health Care Systems and Characteristics of Study Processes: Recruitment in

Community Contexts Instead of in Health Care Systems, Emphasizing Word-of-Mouth Recruitment and Person-to-Person Contact. As a potential solution to recruitment challenges in underrepresented populations, members of both racial and ethnic groups advocated going outside of the health care system to recruit participants in community contexts such as churches, ethnic gathering places, and support groups. African Americans in the Columbia group offered a very interesting recommendation. They suggested that medical researchers conduct surveys in churches to learn which diseases people had and then target survey respondents (and their family members) with specific recruitment messages related to those diseases. Although mass media might be effective, one African American participant stated that participants recruited in churches might be of a "higher caliber" (and, thus, perhaps more adherent to study protocols). Along the same lines, other participants said that word-of-mouth or person-to-person contact was an invaluable recruitment strategy and one based in trust.

Characteristics of Researchers: Researchers Do Not Spend Enough Time with Potential Study Participants to Describe the Risks of a Trial. As a solution to this problem, participants recommended providing general community education about adverse effects and participant liability in clinical trials through mass media campaigns in addition to one-on-one education by clinicians. As a Latina from Charleston explained, "Studies have to be clearer and more specific about what is going to be researched ... If you want to participate, that's fine. If you don't, that's fine too. But you are conscious of what you are going to do."

Overwhelmingly, participants reported desire for their doctors to provide them with appropriate and accurate information about clinical trials. Participants said they wanted clinicians to reassure them that participation was in their best interest and not to feel pressured or have to worry that their doctors were recruiting them to "make money." Participants recommended that physicians receive communication skills training to learn how to better present clinical trials information to diverse audiences. Many participants further stated that they would be more willing to participate in clinical trials if their own doctors administered the drugs or at least stayed involved in the process.

Preferences and Attitudes of Potential Participants: Fear of Adverse Effects, Participant

Liability, and Being Exposed to Unsafe Treatments. Regardless of their race or ethnicity, participants often extrapolated from their experiences as health care consumers to their concepts of clinical trials. Concerns were most apparent when participants described their fears about participating in clinical trials because of possible adverse effects.

As a *potential solution* to fears related to adverse effects, participants reported that these fears could be alleviated if *researchers took more responsibility* for their studies. One female African American participant explained as follows:

I think what would help take some of the fear away is to claim some liability for after the research is done whatever. If there's major side effects and for the research people to accept some of the responsibility to what has happened to that person. It's my understanding that as it is now, once you've agreed to do the research, you're on your own.

Participants wanted personal guarantees about their safety. They understood researcher responsibility to include the following: sharing efficacy statistics for the drug under study, guaranteeing that free health care will be provided to victims of adverse effects, and reassuring participants that a drug will not cause harm or exacerbate other health conditions.

Preferences and Attitudes of Potential Participants: Conducting Clinical Trials with Healthy People. Participants were very resistant to trials that tested drugs on healthy people (phase I trials). However, even the focus group participants who were most unwilling to participate in clinical trials agreed that they were more likely to participate in a clinical trial if it would help with a chronic condition, especially one that had the potential to be life threatening. This theme was often expressed by participants as "if ain't broke, then don't fix it." One male African American participant said,

If I'm dying and they got a cure that they're not sure but yeah, I'll try it. But if I'm fine, if it ain't broke, don't fix it. Leave it alone. But to research, be a part of the research that's going to cause illness—like right now, I got diabetes, I got high blood pressure. If they got research that is going to help cure, I'm going to get better, yeah. Something like that. But if it's something new, no, I ain't going to try it.

Preferences and Attitudes of Potential Participants: Willingness among Potential Participants to Take Part in Trials. Participants from both racial and ethnic groups spoke very positively about the importance of clinical research in advancing science in general and as a means of alleviating health disparities and improving the next generation's health outcomes. Quite poignantly, an African American man said,

That means that inherently, in all of us, we possess the ability to care, to want to do the right thing because of society and things that may have happened in one's personal life ... it's not for an individual purposely. It's for the greater good, the larger group.

In a similar manner, a Latina participant said, "Yes, we Latinos are charitable ... We worry about the other person." Although these statements do not indicate that the participants were high in altruism, they do indicate that, in general, participants perceived altruism as a positive attribute. Participants who stated that they trusted their physicians and had long-standing relationships with them tended to express more positive perceptions of the health care system and greater probability that they would consider clinical trial participation than did other participants.

Themes Unique to African American Participants

Characteristics of the Health Care System and Characteristics of Study Processes: Publicly Recognizing Past Abuses of the Health Care System. African Americans said that they would be positively influenced to participate in clinical trials at hospitals and in health systems that conducted patient satisfaction surveys, formally apologized for medical errors, and publically admitted mistakes they had made. These actions served to foster trust among African Americans in health care providers and medical researchers at these institutions.

Characteristics of Researchers: Lack of Diversity in Research Teams. Two useful recommendations for alleviating mistrust were (1) coaching clinicians in better patient communication and (2) developing diverse research teams.

Preferences and Attitudes of Potential Participants: Mistrust of Medical Research. Only one

participant mentioned the Tuskegee syphilis study specifically. However, other participants expressed the historic mistrust of research in African American communities.

Themes Unique to Latino Participants

Characteristics of the Health Care System and Characteristics of Study Processes: Lack of Availability of Study Materials in Spanish. Latino participants overwhelmingly argued for the availability of study materials in Spanish. They also stressed that materials need to be translated so that people with low literacy or education could understand them. One Latino advised, "If that message is going to be translated from English to Spanish, you have to be sure to choose the right words."

Characteristics of Researchers: Lack of Spanish-speaking Clinicians and Patient Advocates Involved with a Trial. Many participants stressed the importance of having Spanish-speaking clinicians and patient advocates to the successful recruitment of Latinos into clinical trials. In general, Latinos were much more likely to trust Spanish-speaking physicians and often complained that "American" doctors did not have their best interests at heart and might be "in it for the money."

Preferences and Attitudes of Potential Participants: Fear of Participating because of Concerns about Immigration Status that Are Not Adequately Addressed by Researchers. Participants recommended that researchers take the time to clearly explain that immigration status will not be documented and will not prevent participation. They also suggested that study advertisements and informed consent forms make this point explicitly.

DISCUSSION

The goal of the present study was to use a revised IOM framework in a qualitative study to obtain solutions to clinical trials recruitment barriers from racially and ethnically diverse community members. The IOM framework was revised by changing its wording to reflect clinical trials research instead of health care disparities.

To accomplish the study goal, we conducted focus groups with African American and Latino residents of South Carolina. The study is unique in its inclusion of the perspectives of both of these racial and ethnic groups and in its focus on solutions rather than barriers to participation.

The revised IOM model was supported by the study results. The model provided a good fit for the themes that emerged from each group. It is, thus, a novel framework with broad translational applicability to recruitment of diverse populations to a variety of clinical trial types.

Summary of Findings

In the present study, many themes that emerged were shared by the African American and the Latino focus groups. These themes included solutions to characteristics of study processes such as addressing safety concerns and costs associated with research participation. Solutions to characteristics of researchers included increasing the amount of time they spend with study participants and building on the preferences and attitudes of potential participants, such as feelings of altruism as a motivator for trial participation. It was not surprising that many of the proposed solutions were related to the themes commonly found in research on racial and ethnic barriers to research participation (Pirsky et al., 2008).

Although a large amount of information is available on barriers to clinical trial participation, far fewer studies have highlighted solutions or facilitators to minority recruitment (Gadegbeku et al., 2008; Grunfeld et al., 2009). In our study, themes that were specific to African American or Latino participants were related to the unique cultural backgrounds and historical experiences of members of these groups in the United States, particularly in relation to health care. Themes that other investigators have found to be important for both groups—including increasing levels of trust between the community and the research team, making participation available at times that are convenient to participants, and incorporating meaningful incentives into the recruitment process (Gonzalez, Gardner, & Murasko, 2007)—were repeated in the solutions proposed by focus group participants.

Themes that were specific to African American participants focused mainly on solutions to characteristics of study processes, including a request for public recognition of past abuses. Solutions to characteristics of researchers included increasing the diversity of research teams and developing better communication skills among health care professionals.

Among Latino participants, proposed solutions were related to characteristics of study processes, including *language-congruent care*, which has been defined as a set of congruent behaviors, attitudes,

and policies that influence awareness of the distinctive (and similar) characteristics of populations that receive treatment at medical centers and are recruited into clinical trials at those centers (IQ Solutions, Inc., 2000; Lindenberg, Solorzano, Vilaro, & Westbrook, 2001; O'Brien et al., 2006). For example, Lindenberg et al. (2001) conducted a prevention intervention trial to reduce substance abuse and risky sexual activities in young Latinas with low income and found that recruitment outcomes were most successful when conducted by recruiters who were bicultural and bilingual and who identified with the potential participants.

A potential clinical trial navigation approach was viewed favorably by the study participants. The ultimate goal of the present study was to use the proposed solutions generated by the focus group participants to create a multifaceted intervention to increase minority participation in medical research. Such a recruitment intervention could serve as a national model.

A Novel, Tailored, Barriers-focused Navigation Intervention to Enhance Enrollment into Clinical Trials

When questioned about the potential utility of a navigation intervention to enhance enrollment into clinical trials, African American and Latino participants in all of the focus groups were unanimously in favor of such an intervention. The findings, therefore, suggest the importance of the development of a clinical trials navigation intervention to enhance participation of racially and ethnically diverse groups in clinical trials.

We previously successfully applied such an approach in a randomized trial to retain older African American men in a longitudinal cancer screening trial (Ford et al., 2004; Ford, Havstad, Demers, & Cole Johnson, 2005; Ford et al., 2006). Patient navigators contacted trial participants at least once per month by telephone and provided information and referral services to community resources to address needs of the potential participants that, if not addressed, would have interfered with their trial enrollment. Referral services included referrals to food banks, agencies that helped to pay utility costs, and transportation services. The navigators also assisted the participants with scheduling their trial screening appointments and their regular medical care appointments. Over the three-year study period, the navigators made 14,978 calls to

study the 351 participants in the intervention group (Ford et al., 2004). The intensive intervention had the greatest impact among participants with low income, who are often the most difficult to retain. Among participants with low income, those who were in the intervention group demonstrated significantly higher screening adherence rates than those in the control group for prostate cancer screening via prostate-specific antigen test ($p = .001$) and digital rectal exam ($p = .011$) and for lung cancer screening via chest X-ray ($p = .012$) (Ford et al. 2006).

A limitation of prior research is that although the use of a patient navigation intervention has been tested in overcoming barriers to *retaining* diverse study participants, few studies have used this approach in overcoming barriers to *recruiting* diverse participants. Two published studies described the design and implementation of a navigation-based trial focusing on recruitment of American Indians to clinical trials (Guadagnolo et al., 2009; Peteret & Burhanstipanov, 2008). The study results showed that even though clinical trial participation rates were low overall, they were three times higher in the navigated group than in the control group (Guadagnolo et al., 2009).

Navigation approaches are consistent with the core social work function of helping clients to obtain needed services (Darnell, 2007; Davis, Darby, Likes, & Bell, 2009). Similar to social workers, clinical trial navigators could be trained to understand the barriers to and facilitators of trial participation. As navigators begin to mobilize resources on behalf of the client to overcome barriers and capitalize on facilitators, their function will extend beyond an individual-level approach to use a multilevel approach addressing characteristics of the health care system and study processes, characteristics of researchers, and preferences and attitudes of potential participants (Darnell, 2007; NASW, 2008).

For example, Darnell (2007) pointed out that an essential feature of social work practice is the concurrent consideration of the individual and the social context in which the individual lives. In the case of a navigation intervention to improve clinical trial participation, many barriers that inhibit patients from considering participation in trials are grounded in the social context of the health care system and patients' community and personal histories of experiences within it. This is congruent with the multilevel approach of the IOM conceptual

framework of characteristics of the health care system and study processes, characteristics of researchers, and preferences and attitudes of patients.

In the case of clinical trial recruitment, navigators could work with patients to understand multilevel barriers and to develop strategies to overcome them. This approach has great potential to lead to enhanced clinical trial enrollment and increased diversity of trial participants, making trial results more widely generalizable.

LIMITATIONS AND STRENGTHS

This article presents qualitative data from only 57 African American and Latino participants ages 55 to 80 years living in a small area of the United States. However, we made a significant effort to ensure that the focus group participants were from different geographic regions of South Carolina.

Although the study has some limitations, it also has a number of strengths, one of which is the broad application of the revised IOM model to clinical trials in many different disease areas. As such, the information described here has high translational research potential.

In addition, we deliberately held focus groups in nonacademic, community settings (for example, hotels, public libraries, a marketing research firm) in different areas of South Carolina to increase the likelihood of recruiting community-based focus group participants who might not have participated had the groups been held at an academic medical center. In future studies, investigators could conduct surveys with similar populations to ascertain whether similar results can be obtained.

CONCLUSION

This study provides an application of a conceptual framework focused on multiple levels of factors that contribute to disparities in clinical trial participation. The study results could be used to design future, culturally tailored clinical trial navigation recruitment interventions with African American and Latino potential participants.

Many patients who are eligible to enroll in clinical trials face a plethora of tangible and psychosocial barriers that could be addressed by navigators, who could use social work principles to provide navigation assistance. Such assistance would include identifying the following types of resources: transportation resources for patients who make return health care visits related to their trial participation, housing

resources for patients who live a great distance from the trial site and for whom travel would have a prohibitive effect on their ability to participate, and sociocultural resources to help patients (with input from clinical trial investigators and staff) work through issues such as mistrust of the medical system in which the trial takes place (Ferrante, Cohen, & Crosson, 2010).

Navigators also have the potential to change systems to enhance trial recruitment. For example, if the language of consent forms is virtually incomprehensible to the average person, navigators could work with investigators and an institution's institutional review board to revise the language of the forms while retaining the needed content. As Parker et al. (2010) noted, whereas navigation is a barriers-focused approach, navigators also have the capacity to change the systems in which patients function to achieve desired outcomes.

Social workers, who are trained in systems-level approaches to meeting the needs of patients, could play a key role in conducting navigation recruitment interventions to enhance clinical trial participation among diverse population groups, leading to the ultimate goal of making trial results more broadly generalizable and, therefore, significantly more useful in developing new therapeutic interventions. **HSW**

REFERENCES

- Bulmer, C. (1998). Clinical decisions: Defining meaning through focus groups. *Nursing Standards*, 12, 34–36.
- Corbie-Smith, G., Thomas, S. B., Williams, M. V., & Moody-Ayers, S. (1999). Attitudes and beliefs of African Americans toward participation in medical research. *Journal of General Internal Medicine*, 14, 537–546.
- Damell, J. S. (2007). Patient navigation: A call to action [Commentary]. *Social Work*, 52, 81–84.
- Daugherty, C., Ratain, M. J., Grochowski, E., Stocking, C., Kodish, E., Mick, R., & Siegel, M. (1995). Perceptions of cancer patients and their physicians involved in phase I trials. *Journal of Clinical Oncology*, 13, 1062–1072.
- Davis, C., Darby, K., Likes, W., & Bell, J. (2009). Social workers as patient navigators for breast cancer survivors: What do African-American medically underserved women think of this idea? *Social Work in Health Care*, 48, 561–578.
- Eggly, S., Albrecht, T. L., Harper, F. W., Foster, T., Franks, M. M., & Ruckdeschel, J. C. (2008). Oncologists' recommendations of clinical trial participation to patients. *Patient Education and Counseling*, 70, 143–148.
- Ferrante, J. M., Cohen, D. J., & Crosson, J. C. (2010). Translating the patient navigator approach to meet the needs of primary care. *Journal of the American Board of Family Medicine*, 23, 736–744.

- Ford, M. E., Alford, S. H., Britton, D., McClary, B., & Gordon, H. S. (2007). Factors influencing perceptions of breast cancer genetic counseling among women in an urban health care system. *Journal of Genetic Counseling*, 16, 735-753.
- Ford, M. E., Havstad, S. L., Demers, R., & Cole Johnson, C. (2005). Effects of false-positive prostate cancer screening results on subsequent prostate cancer screening behavior. *Cancer Epidemiological Biomarkers and Prevention*, 14, 190-194.
- Ford, M. E., Havstad, S., Vernon, S. W., Davis, S. D., Kroll, D., Lamerato, L., & Swanson, G. M. (2006). Enhancing adherence among older African American men enrolled in a longitudinal cancer screening trial. *Gerontologist*, 46, 545-550.
- Ford, M. E., Randolph, V., Hopkins-Johnson, L., Eason, S. L., Havstad, S., Jankowski, M., et al. (2004). Design of a case management approach to enhance cancer screening trial retention among older African American men. *Journal of Aging and Health*, 16, 395-578.
- Ford, M. E., Wahlquist, A. E., Ridgeway, C., Streets, J., Mitchum, K. A., Harper, R. R. Jr, et al. (2011). Evaluating an intervention to increase cancer knowledge in racially diverse communities in South Carolina. *Patient Education and Counseling*, 83, 256-280.
- Foreman, J., & Damschroder, L. (2007). Qualitative content analysis. In L. Jacoby & L. A. Siminoff (Eds.), *Empirical methods for bioethics: A primer* (pp. 39-62). Oxford, England: JAI Press.
- Gadegbeku, C. A., Stillman, P. K., Huffman, M. D., Jackson, J. S., Kusek, J. W., & Jamerson, K. A. (2008). Factors associated with enrollment of African Americans into a clinical trial: Results from the African American study of kidney disease and hypertension. *Contemporary Clinical Trials*, 29, 837-842.
- Gonzalez, E. W., Gardner, E. M., & Murasko, D. (2007). Recruitment and retention of older adults in influenza immunization study. *Journal of Cultural Diversity*, 14, 81-87.
- Grunfeld, E., Zitzelsberger, L., Coristine, M., & Aspelund, F. (2009). Barriers and facilitators to enrollment in cancer clinical trials: Qualitative study of the perspectives of clinical research associates. *Cancer*, 95, 1577-1583.
- Guadagnolo, B. A., Peterit, D. G., Helbig, P., Koop, D., Kussman, P., Dunn, E. F., & Patnaik, A. (2009). Involving American Indians and medically underserved rural populations in cancer clinical trials. *Clinical Trials*, 6, 610-617.
- Howerton, M. W., Gibbons, M. C., Baffi, C. R., Gary, T. L., Lai, G. Y., Bolen, S., et al. (2007). Provider roles in the recruitment of underrepresented populations to cancer clinical trials. *Cancer*, 109, 465-476.
- IQ Solutions, Inc. (2000, March). *National standards on culturally and linguistically appropriate services in health care: Final report*. Washington, DC: U.S. Department of Health and Human Services, Office of Minority Health.
- Jenkins, V., & Fallowfield, L. (2000). Reasons for accepting or declining to participate in randomized clinical trials for cancer therapy. *British Journal of Cancer*, 82, 1783-1788.
- Joseph, G., & Dohan, D. (2009). Recruiting minorities where they receive care: Institutional barriers to cancer clinical trials recruitment in a safety-net hospital. *Contemporary Clinical Trials*, 30, 552-559.
- Kohler, C. L., Dolce, J. J., Manzella, B. A., Higgins, D., Brooks, C. M., Richards, J. M. Jr., & Bailey, W. C. (1993). Use of focus group methodology to develop an asthma self-management program useful for community-based medical practices. *Health Education Quarterly*, 20, 421-429.
- Lindenberg, C. S., Solorzano, R. M., Vilaro, F. M., & Westbrook, L. O. (2001). Challenges and strategies for conducting intervention research with culturally diverse populations. *Journal of Transcultural Nursing*, 12, 132-139.
- National Association of Social Workers. (2008). *Code of ethics of the National Association of Social Workers*. Washington, DC: NASW Press.
- National Institutes of Health Revitalization Act of 1993, P.L. 103-43, 107 Stat. 122 (1993).
- Nyamathi, A., & Shuler, P. (1990). Focus group interview: A research technique for informed nursing practice. *Journal of Advanced Nursing*, 15, 1281-1288.
- O'Brien, R. L., Kosoko-Lasaki, O., Cook, C. T., Kissell, J., Peak, F., & Williams, E. H. (2006). Self-assessment of cultural attitudes and competence of clinical investigators to enhance recruitment and participation of minority populations in research. *Journal of the National Medical Association*, 98, 674-682.
- Parker, V. A., Clark, J. A., Leyson, J., Calhoun, E., Carroll, J. K., Freund, K. M., & Battaglia, T. A. (2010). Patient navigation: Development of a protocol for describing what navigators do. *Health Services Research*, 45, 514-531.
- Peterit, D. G., & Burhanstipanov, L. (2008). Establishing trusting partnerships for successful recruitment of American Indians to clinical trials. *Cancer Control*, 15, 260-268.
- Pinsky, P. F., Ford, M., Gamito, E., Higgins, D., Jenkins, V., Lamerato, L., et al. (2008). Enrollment of racial and ethnic minorities in the Prostate, Lung, Colorectal and Ovarian Cancer Screening Trial. *Journal of the National Medical Association*, 100, 291-298.
- Robinson, J. M., & Trochim, W. M. (2007). An examination of community members', researchers' and health professionals' perceptions of barriers to minority participation in medical research: An application of concept mapping. *Ethnicity & Health*, 12, 521-539.
- Sim, J. (1998). Collecting and analysing qualitative data: Issues raised by the focus group. *Journal of Advanced Nursing*, 28, 345-352.
- Smedley, B. S. A., & Nelson, A. R. (Eds.). (2003). *Unequal treatment: Confronting racial and ethnic disparities in health care*. Washington, DC: National Academies Press.
- Swanson, G. M., & Ward, A. J. (1995). Recruiting minorities into clinical trials: Toward a participant-friendly system. *Journal of the National Cancer Institute*, 87, 1747-1759.
- Thom, D. H., & Campbell, B. (1997). Patient-physician trust: An exploratory study. *Journal of Family Practice*, 44, 169-176.
- Weber, R. P. (2008). *Basic content analysis*. Newbury Park, CA: Sage Publications.

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APPENDIX: INTRODUCTION AND VERBAL INFORMED CONSENT

"Hello. My name is Dr. [____]. I'm from the Medical University of South Carolina. Thank you for attending this session. Our purpose is to get your thoughts on overcoming barriers that may keep you from taking part in medical research studies. Since we want everyone's opinions and thoughts, we ask that everyone be given a chance to speak. We will ask a few questions and may follow up on what is said. Please know that everything we say to each other here is confidential and that we will not use your name in anything we report. We would like to tape this session, and we will erase the audiotapes after they are analyzed. You are taking part voluntarily. If there is anything you do not want to discuss, just say so. At the end of the session, you will receive a \$50 grocery gift card to reimburse you for your time.

"Are there any questions so far?

"May I have your permission to continue?

"Before we start, it would be helpful to go around and say who you are just by first name."

Discussion: Some people may have concerns about being in medical research studies. These concerns may be about travel costs, time, fear of

being in an experiment, worries about safety, or lack of trust in medical researchers or the health care system in general.

QUESTION 1: "What can be done to overcome these concerns?"

Probe 1: "What would make you or your family or friends want to take part in medical research?"

Probe 2: "What could your doctor do to get you or your family or friends to want to take part?"

Probe 3: "What could the medical researchers do to get you or your family or friends to take part in research?"

Probe 4: "What would prevent you or your family or friends from taking part in medical research?"

QUESTION 2: "Imagine that someone was available to guide people through the process of taking part in clinical research. What kinds of things could that person help with?"

Probes: Health information

Transportation

Financial support

"Would you be interested in working with a person in this way?"

QUESTION 3: Participants were provided with a flyer in either Spanish with Latinos in the photos or in English with African Americans in the photos. They were then shown an online video about participation in clinical research. They were asked whether they would be more likely to participate in research after seeing the flyer and video. (The video can be viewed at the following address: http://www.cisrtp.org/programs/mcdhemoes_psa.asp.)

[Stop tape. Give out gift cards.]

Appendix J

Brochure for the SE VIEW Alzheimer's Disease project.

POSITIVE THINKING: BRAIN TEASER

Although there is no cure for Alzheimer's disease, research continues to reveal that there are general lifestyle and wellness measures that can be taken to keep your mind active. Activities such as crossword puzzles, word searches and sudoku are great ways to exercise your mind!

Directions: Fill in the blank squares with numbers 1 through 4.

Tip: Numbers shouldn't be repeated in any rows or columns.

3			2
	4	1	
	3	2	
4			1



CONTACT US

We are dedicated to ongoing Alzheimer's research and committed to finding answers for the treatment of this devastating disease. We appreciate your interest in our research program.

**For more information, please call
(843)724.2302**

Memory Matters: Alzheimer's Disease



MYTH BUSTERS: ALZHEIMER'S EDITION

MYTH #1

"Only older individuals can develop Alzheimer's disease"

FACT:

There have been cases reported of the disease affecting individuals in their 30s, 40s and even 50s. Referred to as "early on-set" Alzheimer's disease, approximately 200,000 Americans under the age of 65 have been diagnosed.

Source: Alzheimer's Association

MYTH #2

"Alzheimer's can be prevented and even cured"

FACT:

At this time the disease cannot be prevented or cured, making early detection ever more important. Early detection allows the opportunity to plan responsibly for the future by taking advantage of resources such as medicines, therapies and supportive services to help manage your symptoms and provide support for your family.

MYTH #3

"Dementia is just a normal part of growing older"

FACT:

Dementia and Alzheimer's are not a normal part of aging. Per the Alzheimer's Association, a few warning signs of dementia/Alzheimer's include:

- Memory loss that disrupts life
- Challenges with problem solving
- Confusion with time or location
- Personality & mood changes
- Language difficulties such as repeating oneself or struggling to find the right word.

WHAT IS ALZHEIMER'S DISEASE?

It's estimated that one in nine people in the United States currently have Alzheimer's disease (AD).

Alzheimer's disease is the most common form of dementia and results in the loss of brain cells.

As time passes, the brain begins to shrink, leading to nerve cell death and tissue loss.

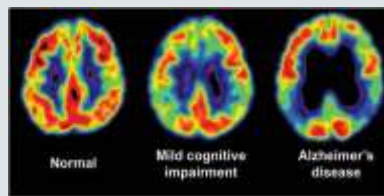
The number of cases of people with Alzheimer's is rapidly increasing. The Alzheimer's Association reports that as many as 16 million Americans will have the disease by 2050. An estimated 80,000 South Carolinians currently have the disease or related dementia.

Source: Alzheimer's Association



WHAT PARTS OF THE BRAIN ARE AFFECTED?

The disease affects areas of the brain that aid in thinking, planning, remembering, the ability to form new memories and language.



AM I AT A HIGHER RISK?

The greatest known risk factor is increasing age; the majority of people with Alzheimer's disease are age 65 or older.

Other risk factors include family history, genetics, head trauma and heart health.

ALZHEIMER'S

BY THE NUMBERS

6TH

AD is the 6th leading cause of death in the United States.

Every 67 seconds someone in the United States develops the disease.

67

SECONDS

5.4
MILLION

Approximately 5.4 million Americans have Alzheimer's.

Payments for care in the U.S. are estimated at \$200 billion.

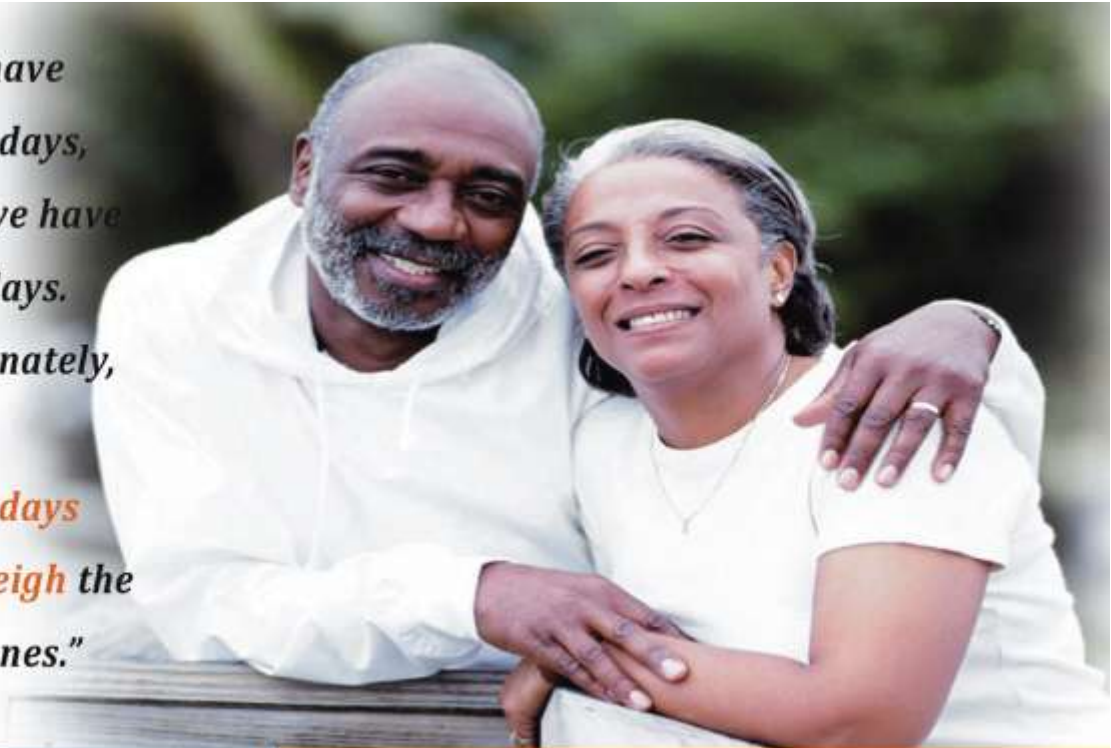
\$200
BILLION

Source: Alzheimer's Association

Appendix K

Flyer for Abbeville Area Medical Center - SE VIEW Alzheimer's Disease project.

*"We have
good days,
and we have
bad days.
Fortunately,
the
good days
outweigh the
bad ones."*



Memory Matters: Event Details

When:

*Tuesday, June 3rd, 2014
6:00pm*

Location:

*Education Room
Administrative Wing
Abbeville Area Medical
Center
420 Thomson Circle
Abbeville, SC 29620
864.366.5011*

*Caregiver respite care
available courtesy of SC
Alzheimer's Association
Chapter*

ALZHEIMER'S DISEASE IS NOT A NORMAL PART OF AGING.

*Every 67 seconds someone in the United States
develops Alzheimer's disease
(Source: alz.org)*

Dr. Jacobo Mintzer will lead a presentation aiming to inform the community about Alzheimer's disease and highlight how modern day technology is allowing rural residents to receive the care they need without leaving the comfort of their primary care physician's office.

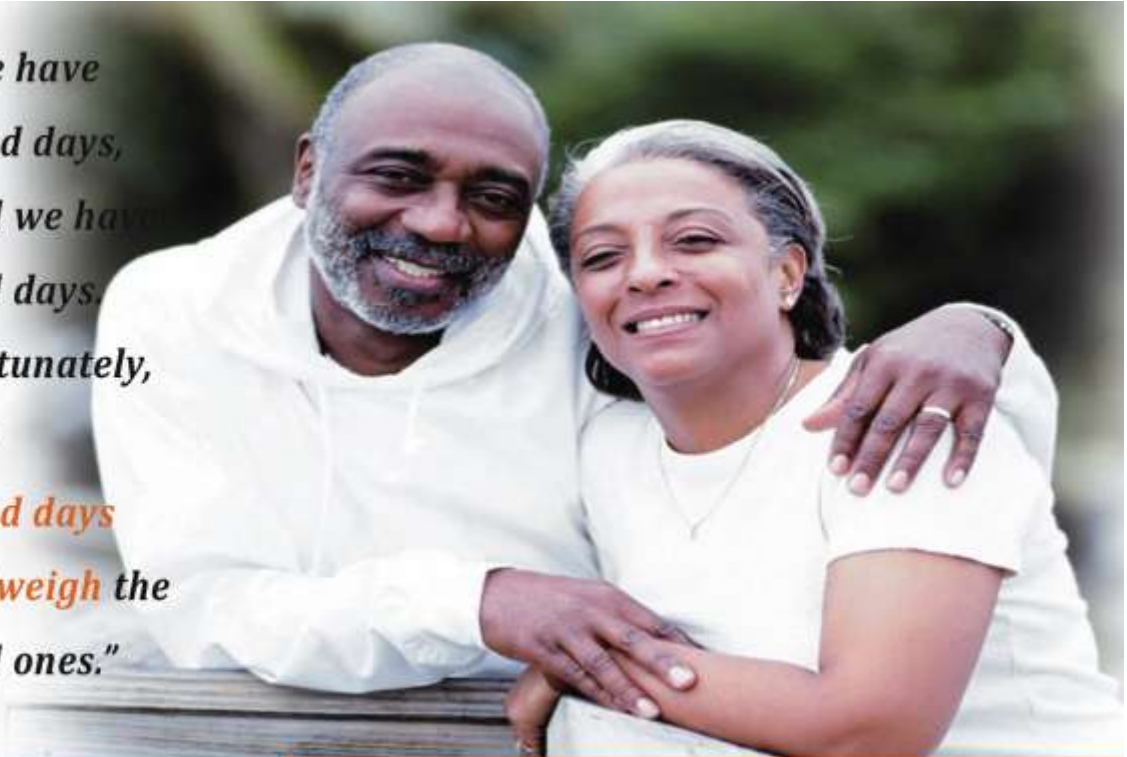
Join members of the community including Dr. Glen Scott of Abbeville Neurology and Mr. Sam Wiley, Vice President of Programs of the SC Alzheimer's Association Chapter for this FREE community awareness event as we come together to learn more about this devastating disease.

*For more information, please contact Sharmaine Roaden,
MUSC Program Coordinator at
843.724.2302 ext. 6334*

Appendix L

Flyer for Andrews, SC - SE VIEW Alzheimer's Disease project.

*"We have
good days,
and we have
bad days.
Fortunately,
the
good days
outweigh the
bad ones."*



Memory Matters: Event Details

When:

Wednesday, June 25th
2014
6:00pm

Location:

Ebenezer Missionary
Baptist Church

1207 Martin Luther
King Dr.
Andrews, SC 29510

Caregiver respite care
available courtesy of SC
Alzheimer's Association
Chapter

ALZHEIMER'S DISEASE IS NOT A NORMAL PART OF AGING.

Every 67 seconds someone in the United States
develops Alzheimer's disease
(Source: alz.org)

Dr. Jacobo Mintzer will lead a presentation aiming to inform the community about Alzheimer's disease and highlight how modern day technology is allowing rural residents to receive the care they need without leaving the comfort of their primary care physician's office.

Join members of the community including Mayor Rodney Giles, Dr. B. Lee Jones of Andrews Medical Center and Mr. Sam Wiley, Vice President of programs of the SC Alzheimer's Association Chapter for this FREE community awareness event as we come together to learn more about this devastating disease.

For more information, please contact Sharmaine Roaden,
MUSC Program Coordinator at
843.724.2302 ext. 6334

Appendix M

CES Teams.



Past Community Engaged Scholars Program Teams

Cohort 1: 2009 - 2010

Team 1

Community Partner: Gwen Gillenwater, DisAbility Resource Center

Academic Partner: Susan Newman, College of Nursing, MUSC

Project Title: Unmet Health Needs of Individuals with Disabilities in the Tri-County Area

Team 2

Community Partner: Joyce Winkler, Gloria Warner, Carolina Rodriguez-Cook, Eau Claire Community Health Center Cooperative; Kathy Stone, Select Health of SC.

Academic Partner: Carol Wagner, Department of Pediatrics, College of Medicine, MUSC

Project Title: Importance of Vitamin D as it Relates to Health Status and Disease

Team 3

Community Partner: Beth Carpenter, Mayor's Office, Hollywood, SC

Academic Partner: Renata Leite, College of Dental Medicine, MUSC

Project Title: Periodontal Disease Prevention in the Gullah Community

Team 4

Community Partner: Cindy Dodds, Pattison's Academy

Academic Partner: Holly Wise, College of Health Professions, MUSC

Project Title: Improving the Quality of Life for Children with Severe Disabilities in the Lowcountry

Team 5

Community Partner: Reverend Remus Harper, Mt. Carmel African Methodist Episcopal Church; Reverend Jeannette Jordan, The Church, Christian Disciples of Christ

Academic Partner: Kristin Wallace, Katherine Sterba, Department of Biostatistics and Epidemiology, MUSC; Debbie Bryant, Outreach Services, Hollings Cancer Center, MUSC

Project Title: Cancer Prevention and Wellness in the Faith-Based African-American Community

Team 6

Community Partner: Charlotte Anderson, 211 Hotline, Trident United Way

Academic Partner: Janet York, College of Nursing, MUSC

Project Title: Youth and Community Suicide Prevention

Cohort 2: 2010-2011**Team 1**

Community Partner: Patricia Kelly, A Family Affair HIV Ministry

Academic Partner: Elisabeth Pickelseimer, Department of Biostatistics and Epidemiology, MUSC

Project Title: Addressing the Needs of Incarcerated Persons Living with HIV/AIDS as they Prepare for Community Re-entry

Team 2

Community Partner: Jermel President, DAE Foundation

Academic Partner: Roger Newman, Department of Obstetrics and Gynecology, MUSC

Project Title: Addressing Childhood Obesity in Title I Schools in Charleston County

Team 3

Community Partner: Myra Pinckney, St. James-Santee Family Health Center

Academic Partner: Carol Lambourne, Department of Family Medicine, MUSC

Project Title: Addressing Quality Improvement in a Rural, Federally Qualified Community Health Center

Team 4

Community Partner: Stacy Gaillard, Vanessa Grant-Clark, Monica McCrackin, Ralph H. Johnson VA Medical Center; Virginia King, Lowcountry AIDS Services

Academic Partner: Charlene Pope, College of Nursing, MUSC

Project Title: Prevention of HIV/AIDS among Lowcountry Veterans

Team 5

Community Partner: Laura Stefanelli, Margaret Kunes, Respite Care Ministries

Academic Partner: Elaine Amella, College of Nursing, MUSC

Project Title: Addressing the Needs of Persons with Dementia and their Caregivers

Cohort 3: 2012

Team 1

Community Partner: Akeem Bell, Lowcountry Alliance for Model Communities (LAMC/Environmental Community Advisory Board)

Academic Partner: Kristen French, Department of Medicine, MUSC

Project Title: Systemic Lupus Erythematosus in the Neck area of Charleston County: Investigation of Health Disparities Related to Environmental Exposures

Team 2

Community Partner: Marvin Sineath, Lucinda Shore, Jim Quill, Alpha-1 Association

Academic Partners: Pamela Holtclaw Williams, College of Nursing, MUSC; Charlie Strange, Dawn McGee, Michael Graves, Alpha-1 Registry, MUSC

Project Title: Application of CBPR Framework to Assess and Prioritize Socio-Political Needs of an Alpha-1 Community

Team 3

Community Partner: Carrie Whipper, Palmetto Project

Academic Partner: Carolyn Jenkins, College of Nursing, MUSC

Project Title: An Integrated Approach to Diabetes Management and Associated Complications at Lowcountry Food Bank Sites

Cohort 4: 2013-2014

Team 1

Community Partner: Robert Stevens, Charleston County School District

Academic Partner: Coleen Martin, Boeing Center for Children's Wellness at MUSC

Project Title: Improving Student, Faculty, and Staff Outcomes: Evaluating the Use of a School Wellness Checklist in Charleston County Schools

Team 2

Community Partner: Tracy Armstrong, Donate Life South Carolina

Academic Partner: John Sieverdes, College of Nursing, MUSC

Project Title: Lifestyle Improvements for Transplantation Success (LIFTS)

Team 3

Community Partner: Cheryl Hollis, Nicole Lovecchio, and Angela Moreland, Wings for Kids

Academic Partner: Zachary Adams

Project Title: Helping Parents Take Flight: Developing and Testing the Feasibility of an Integrated Parent Training Program in WINGS Social-Emotional Learning Program

Cohort 5: 2014-2015

Team 1

Community Partner: Elizabeth Ciesar, Dee Norton Lowcountry Children's Center

Academic Partner: Lisa Jobe-Shields, College of Medicine, Department of Psychiatry and Behavioral Sciences, MUSC

Project Title: Assessing Mental Health Needs of Caregivers of Maltreated Children

Team 2

Community Partner: Liana McNallan, People Against Rape; Janet Shealy, The Citadel

Academic Partner: Joah Williams, National Crime Victims Research and Treatment Center, Department of Psychiatry and Behavioral Sciences, MUSC

Project Title: Feasibility and Implementation Strategies in College Sexual Assault Prevention Programming.

Team 3

Community Partner: Dana Mitchel, Lowcountry Food Bank

Academic Partner: Adebowale Odulana, Department of Pediatrics, MUSC

Project Title: Obesity Prevention in Underserved Communities

Team 4

Community Partner: Karen Carter, Appalachian Council of Governments/Area Agency on Aging

Academic Partner: Angela Fraser, Department of Food, Nutrition, and Packaging Sciences, Clemson University

Project Title: Nutrition Education for Appalachian Rural Older Adults

Appendix N

Participant feedback indicates the value the Academy adds to their preparation for health professions education admission. Participants who have gained admission to MUSC programs specifically note the significance of networking with faculty, staff, and students in establishing mentor relationships, increasing their understanding of admission requirements and processes, and strengthening their sense of comfort and belonging on the MUSC campus.

Summary of SE VIEW Funded HCA Sessions

HCA Year	Alumni	Matriculated to Undergrad	% Matriculated to Undergrad	Graduated from Undergrad	% Graduated from Undergrad	Enrolled in Health Major	% Enrolled in Health Major
2011	41	40	98	13	32	9	22
2012	30	26	87	5	17	5	17
2013	22	21	95	6	27	3	14
2014	26	23	88	1	4	1	4

Appendix O

SE VIEW Evaluation Report (Phase I projects).

Southeastern Virtual Institute for Health Equity and Wellness (SEVIEW)

EVALUATION REPORT August 7, 2015

Prepared by
Jennifer C. Friday, Ph.D.
Evaluation Consultant

Executive Summary

This report presents the results of an evaluation of the process, implementation and outcomes of Phase 1 of the Southeastern Virtual Institute for Health Equity and Wellness (SEVIEW), a multi-site project designed to reduce health care disparities.

Funding for SEVIEW was made possible by two earmarks authored by Congressman James E. Clyburn. In FY-07, Congressman Clyburn authored an item in the Department of Defense appropriations, under Education and Training entitled “Health Research and Disparities Eradication,” for which \$12.7 million was appropriated. This earmark provided funding for SEVIEW Phase I programs from July 1, 2010 through July 15, 2015. In FY-08, Congressman Clyburn authored another earmark as an item in the Department of Defense appropriation, under Research and Development entitled “Health Research and Disparities Eradication Program,” which received \$6.9 million. The FY-08 earmark supported SEVIEW Phase II programs from September 1, 2011 through September 30, 2016. Both earmarks were accessed through a rigorous grant application process administered by the Telemedicine and Advanced Technology Research Center (TATRC) a network of public-private partnerships working together to improve military-civilian healthcare. TATRC operates under the auspices of the United States Army Medical Research and Materiel Command, Department of Defense.

The overall goal of SEVIEW is to deliver innovative health care and community capacity-building solutions for underserved populations. The project’s strategic aim is the promotion of community and personal health through the elimination of health disparities. A secondary but no less important aim of SEVIEW is to reduce the rejection rate and improve the enlistment and retention rate of active duty military personnel.

Fourteen programs were funded in Phase I of SEVIEW focused on three critical areas 1) Education 2) Preventive Medicine, Health and Wellness and 3) Community Partnerships. SEVIEW-funded programs targeted Alzheimer’s/aging, cancer, diabetes, heart disease /hypertension, HIV/AIDS, obesity, oral health, substance abuse and stroke/critical care for populations throughout South Carolina’s rural, urban, and suburban communities. This evaluation, using a mixed methods approach, was conducted to assess the progress of SEVIEW implementation and determine the extent to which the 14 programs funded in Phase 1 achieved the benchmarks outlined below:

- Increase awareness of health issues in communities and address educational deficits related to chronic diseases.
- Develop novel methods to engage communities in the prevention and treatment of chronic diseases
- Develop community-based services and research initiatives focused on chronic diseases and socioeconomic factors
- Develop a range of youth-based, activities and interactive, electronic modalities to increase the prevention, detection and treatment of chronic diseases.

RESULTS

In aggregate, more than 20,000 participants had contact with the various activities and services offered by the 14 SEVIEW-funded programs. Each of the programs reported results in at least one of the following areas:

- Disease Prevention and Wellness Promotion: Active and documented community participation in preventive activities such as exercise, fitness, and wellness programs as well as increased focus on social factors for improving health outcomes.
- Knowledge Changes: Increased awareness of lifestyle management; diabetes care; breast, cervical, and prostate cancer; and stroke symptoms.
- Access to Services Improvement: Increase in the number of clinical sites thereby expanding access to health care services, screenings, and improvement in disease management, technology utilization, and diabetes care.
- Quality of Services: Increase and improvement in training of community volunteers and health care staff and expansion of patient navigation services.

- Synergies: Relationships were forged between investigators, staff, and community leaders resulting in increased funding for research and healthcare activities.
- Innovative Health Care: Innovations include implementation of community capacity solutions that increased community support for research and health care services.
- Research Productivity: Research relationships expanded to include Historically Black Colleges and Universities (HBCUs) resulting in increased student participation and scholarships, grant applications, scientific presentations, and publication of research papers.

Challenges and Areas Noted for Further Work

The SEVIEW effort had limitations and its share of challenges. Principal Investigators reported obstacles that hampered implementation related to the Institutional Review Board (IRB) process required by the Medical University of South Carolina (MUSC) and by the funder. The IRB process, especially the requirement to secure approval from multiple organizations, resulted in delays and some missed opportunities to serve greater numbers of clients/patients. Other barriers arose related to the capacity of programs to be innovative, inclusive, and directly responsive to the regulatory requirements for working with military personnel. Funded programs were also challenged by the loss of personnel and delays in replacing them.

Recommendations

Further development of training, activities, and innovation is suggested in the following areas to increase the expanse of outcomes in line with the goals of SEVIEW:

- Work with military personnel or military volunteers to develop materials that focus on the vital role of health in the military. Incorporate explicit examples to which military personnel can relate and increase participation of current and former military service members in training and activities.
- Include varied examples of the work of military to increase student interest. These should be designed to show the practical relevance of healthy behaviors to personal careers and motivate members to adopt these practices in their own self-interest.
- Prepare materials for parents, teachers and communities that illustrate the practical relevance of healthy behaviors and how to integrate these practices at the personal and community levels.
- Include mental health and social health (relationships) in Wellness Workshops.
- Include culturally competent workshops and activities to boost student understanding of and positive regard for opportunities offered by the military (e.g., need for scientists, communication specialists, engineers, technicians, front-line staff, etc.)
- Train and empower more role models, especially military or ex-military volunteers, to:
 - Serve as tutors, counselors, sports coaches, and mentors whose presence and active participation in activities serves to reinforce healthy behaviors and drive important growth (mental, physical, communal, communication, decision-making, conflict resolution, violence prevention, and leadership).
 - Engage community organizations and churches in addressing key issues including mental health, relationships and self-esteem.
 - Facilitate youth retreats focused around life styles, conflict resolution, relaxing, breathing, mediation, yoga, decision-making, violence prevention, and bonding.
 - Mount public awareness campaigns about the issues SEVIEW is addressing.

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II. INTRODUCTION AND BACKGROUND

The populations of South Carolina (SC) and other Southeastern states share a disproportionate burden of chronic diseases including diabetes, hypertension, cancer, metabolic syndrome and periodontal disease, which compromise personal and community health as well as limit opportunities for individuals to enter military service. From 2007 to 2010, 23% of young adults were deemed obese (NCHS, 2007). More than nine million Americans of prime recruitment age are too overweight to enlist in the military and, "Overall, only one in four of our young adults between age 17 and 24 is eligible for military service," according to Rear Admiral James Barnett, Jr., Deputy Commander of the Navy Expeditionary Combat Command. Obesity is identified as one of the main reasons for lack of "mission readiness." The military discharges more than 1,200 first-term enlistees each year because of weight problems, costing the armed services about \$50,000 per person—or \$60 million—to recruit and train replacements (National Bureau of Economic Research, 2011). The heavily rural Southeast is especially vulnerable to issues of healthcare access and quality and affordability. This is compounded by historical and communication difficulties that impact health-related information-sharing across geographic, income, racial, ethnic and "trust" divides (South Carolina Department of Health and Environmental Control, 2009).

Compelling evidence exists to show that race and ethnicity correlate with persistent and often increasing health disparities, amplifying the incidence and prevalence of chronic diseases and their complications (OMH, 2011). For example, the age-adjusted death rate from diabetes is 40.5 per 100,000 persons for Blacks, more than double the 19.9 rate for Whites (OMH 2011). African-Americans are more likely than any other racial or ethnic group to die from heart disease, and African-American women are more than twice as likely to die of cervical cancer (CDC, 2014). With escalating healthcare costs impacting federal, state and employer budgets, the economic consequences of continued health disparities represent a key driver for effecting change, improving quality of care for many Americans, and ensuring a military-ready population.

Previous research suggests that working with community leaders, community organizations and diverse coalitions can positively influence community changes. Factors such as hiring community mobilizers and providing financial support to nontraditional partners were cited as accelerating the rate at which changes for preventive health action could be attained (Colie-Akers, Fawcett & Schultz, 2007; Briscoe & Pichet, 1999). In addition, the distribution of changes by various parameters (e.g., by goal, target population, and duration) proved to be useful in predicting future population-level health improvement (Mueller, et al., 1999). Training of providers on cultural competence and implementation of screening and education programs that fostered empowerment showed effectiveness, especially in rural areas (Maseru & Claiborne, 2001; Briscoe & Pichet, 1999).

In South Carolina, access to high quality and affordable prevention measures, including screening and appropriate follow-up, is essential to saving lives, reducing disability, and eliminating disparities and their associated costs. MUSC is addressing these health burdens and disparities through the Southeastern Virtual Institute for Health Equity and Wellness (SEVIEW). The vision of SEVIEW is to develop a nationally recognized, multidisciplinary, inter-professional team of researchers, educators, outreach professionals, and laypersons dedicated to and skilled in reducing health disparities. The SEVIEW model focuses on health disparities and provides leadership through an Administrative and Coordinating Core that oversees project logistics, financial transactions, regulatory compliance, and bi-directional communications. Critical to SEVIEW project success was the development of strategic partnerships and programs designed to:

- Increase awareness of health issues in communities and address educational deficits related to chronic diseases.
- Develop novel methods to engage communities in the prevention and treatment of chronic diseases.
- Develop community-based services and research initiatives focused on chronic diseases and socioeconomic factors.
- Develop a range of youth-based, active and interactive, electronic modalities to increase the prevention, detection, and treatment of chronic diseases.

SEVIEW is a community-based initiative to reduce health disparities, improve health among youth, and increase access to health care services. This multi-site program includes several related projects with overlapping and complementary goals, strategies, and activities. Although SEVIEW does not fit the traditional model of a multi-site project, it does include several of the factors that have been identified as key to multi-site research and evaluation (O'Connor, et al, 2015, King & Lawrenz, 2011). These factors include:

- Development of the conceptual model using multiple sources and strategies.
- Recommendations of the project's experts and staff incorporated into the model along with epidemiologic and systems development theory and findings from other evaluation studies.
- Development of projects to address issues of reach, effectiveness, adoption, implementation, and maintenance.
- Standard operating procedures for all projects.
- Meetings hosted by an administrative core to establish communication processes. The collaborative discourse at these face-to-face meetings also served to build a communal approach where perspectives and issues were jointly explored.
- Meetings conducted to share findings and provide updates on the tailoring of strategies.
- Development and use of evaluation tools, both qualitative and quantitative, to collect and report similar data.
- Involvement of representatives from each program/site in planning and evaluation.
- Execution of a geographically diverse set of programs targeting rural, urban and suburban populations.
- Inclusion of community stakeholders and various community groups and advisors.

Overall the SEVIEW project represents an evidence-based approach that integrates primary care and public health strategies with health disparities reduction and quality care access efforts. The programs and strategies offered across multiple SC settings add to research in this field and build local site capacity to guide and improve community health outcomes. SEVIEW funded 14 programs in Phase I of the project. Each program defined its own set of goals and objectives, all contributing to the overall purpose of SEVIEW. The programs covered a range of populations, health outcomes, and disease topics, and employed a variety of traditional and innovative methodologies.

The 14 programs funded in Phase I of SEVIEW focused on three critical areas 1) Education 2) Preventive Medicine, Health and Wellness and 3) Community Partnerships. SEVIEW-funded programs targeted Alzheimer's/aging, cancer, diabetes, heart disease /hypertension, HIV/AIDS, obesity, oral health, substance abuse and stroke/critical care. These programs addressed issues across the life span for populations throughout South Carolina's rural, urban, and suburban communities. An evaluation, using qualitative and quantitative methods, was conducted to assess implementation and overall outcomes and determine the extent to which the programs achieved the major benchmarks outlined below:

- Increase awareness of health issues in communities and address educational deficits related to chronic diseases.
- Develop novel methods to engage communities in the prevention and treatment of chronic diseases
- Develop community-based services and research initiatives focused on chronic diseases and socioeconomic factors
- Develop a range of youth-based, activities and interactive, electronic modalities to increase the prevention, detection and treatment of chronic diseases.

The multi-faceted goals of SEVIEW-funded programs are briefly summarized below.

A. SEVIEW Phase I — Funded Programs

1. Stroke and Stroke Risk Reduction Initiative (SSRI)

Enhances the Remote Evaluation of Acute Ischemic Stroke (REACH) telemedicine system to identify hypertension in young and rural patients, manage their care, and extend access to expert stroke treatment in SEVIEW regions, which have very high stroke incidence, morbidity and mortality rates. SSRI has 15

- REACH hospitals. (Robert Adams, MD and Daniel Lackland, DrPH) <http://www.reachcall.com/>
2. **SC TeleSupport: Diabetes Management Initiative**
Develops a sustainable system of diabetes management in indigent patients in Charleston and neighboring counties using information technology to improve patient-provider communications and patient adherence to treatment. (Leonard Egede, MD, MS)
 3. **Tele-Critical Care Program to Reduce Rural Health Disparities**
Research project combining telemedicine and provider education to improve sepsis management by engaging rural hospitals in a telemedicine network. (Dee Ford, MD)
 4. **Telemedicine in the Evaluation of Alzheimer's Disease in a Rural, African American Population**
Investigates the underlying factor(s) that contribute to the fact that Alzheimer's disease (AD) afflicts more African Americans than whites and works to develop knowledge and interventions that will help to close this gap. (Jacobo Mintzer, MD)
 5. **Heart Health: Preventive Cardiology Research Center**
Designed to provide outreach to rural and other medically underserved children and families with known cardiovascular risk factors such as hypertension, pre-diabetes, and dyslipidemia. (Melissa Henshaw, MD) <http://www.musckids.com/heart/health>
 6. **Lean Team Initiative**
School and community-based program designed to treat childhood obesity and improve the health and fitness of children, families, and teachers in the Charleston County School District. (Janice Key, MD) <http://www.musc.edu/leanteam>
 7. **Junior Faculty Development Program**
Increases diversity of healthcare workforce and health disparities research arena by focusing on scientific/career mentoring, time management, regulatory training assistance, protected time for research, and grantsmanship mentoring. (Sabra C. Slaughter, PhD)
 8. **Health Careers Academy Program**
One-week residential summer program for undergraduates to prepare for competitive admission to medical, dental or nursing school. Focus on mentoring, parent involvement, academic advisement and career tracking with the goal of increasing diversity in the healthcare workforce and health disparities research arena. (Angelica Ellman Christie, MEd) <http://www.scahec.net/hcp/hcp.html>
 9. **Community Engaged Scholars Initiative (CES)**
Provides training, pilot funds and mentoring to five teams consisting of a MUSC researcher and community partner(s) with a collaborative interest in community-based, participatory research primarily exploring ways to eliminate health disparities. (Jeannette Andrews, PhD) <http://academicdepartments.musc.edu/nursing/cchp/cescholars.htm>
 10. **The Health Empowerment Zone (HEZ)**
A community coalition addressing healthy eating, active living and positive lifestyles through a partnership with the City of North Charleston and several organizations to develop programs that target health and wellness, poverty, and crime. (Deborah Williamson, DHA, CNM)
 11. **Mobile Outreach Van, Educational, and Navigational Health Services for Underserved Populations (MOVENUP Initiative)**
Designed to reduce disparities in cancer services access, morbidity and mortality in the I-95 Corridor with a focus on cancers occurring to a disparate degree in the SEVIEW regions: breast, cervical and prostate. (Marvella Ford, PhD) <http://hcc.musc.edu/commitments/initiatives.htm>
 12. **MUSC Public Information and Community Outreach (PICO) Initiative**
Heightens public awareness of health issues, provide prevention and health screening opportunities, and promote awareness of/access to affordable and culturally competent care. (David E. Rivers, MA) <http://pico.library.musc.edu/>
 13. **Community Institutes for Traditional and Nontraditional Leaders (CLI)**
Helps communities and constituencies build capacity to identify, access and develop leadership resources through linkages with scientific, political and local communities, and incorporation/cultivation

of nontraditional (artists, musicians, athletes) and traditional leaders (elected officials, preachers, lawyers, etc.). (David E. Rivers, MA)

14. **Healthy People in Healthy Communities: Promoting Good Health in Williamsburg County Across the Lifespan**

Promotes awareness of risk factors for chronic disease, behaviors to achieve healthy lifestyles, and access to effective healthcare and medications as keys to lifelong health promotion and disease prevention; promotes adoption of EMR; fully engage providers in the Quality Improvement Network; establishes local Health Information Exchanges and links them to the National Health Information Network; assesses the impacts of clinical automation on the care delivery process and the impacts of lifestyle changes and use of primary healthcare services and medications on health indicators. (Brent Egan, MD and Marilyn A. Laken, PhD) <http://worst2first.musc.edu>

The overall strategies utilized by the funded programs were community-based prevention research (CBPR), Health IT, Health Literacy, telemedicine and workforce development. **Table 1** provides a breakdown of the represented groups and the targeted strategy.

Table 1: SEVIEW Programs by Lifespan Target and Strategies

Program	Lifespan Target	CBPR	Health IT	Health Lit	Tele-medicine	Workforce Dev.
EDUCATIONAL PROGRAMS TO REDUCE HEALTH DISPARITIES						
Public Information and Community Outreach (PICO)	children, adolescents, and adults		X	X	X	X
Community Institute for Traditional and Nontraditional Leaders	adolescents and adults			X		X
Administrative Core	children, adolescents and adults	X		X		X
PREVENTIVE MEDICINE, HEALTH AND WELLNESS PROGRAMS						
Heart Health Initiative (Preventive Cardiology Research)	children, adolescents, and adults		X	X		X
SC Tele-Support (Diabetes Management Initiative)	adults	X	X	X	X	
Stroke Risk Reduction Initiative	adolescents and adults		X		X	X
Tele-Critical Care to Reduce Rural Health Disparities	adults	X	X	X	X	X
COMMUNITY PARTNERSHIPS AND OUTREACH PROGRAMS						
Community Engaged Scholars – Collaborations in CBPR	children, adolescents and adults	X		X		X
Health Empowerment Zone	children, adolescents and adults	X		X		X
Healthy People in Healthy Communities	children, adolescents and adults			X		X
Lean Team Initiative	adolescents and adults			X	X	

Mobile Outreach Van (MOVENUP) Initiative	adolescents and adults			X		X
Telemedicine in the Evaluation of Alzheimer's Disease	adults		X		X	

III. PURPOSE

The purpose of the evaluation was to provide a comprehensive assessment of the degree to which the SEVIEW-funded programs were effective in their implementation and reached the defined benchmarks. The Evaluation and Tracking Core (ETC) was established at the beginning of the project to ensure that evaluation and quality improvement processes could be used, where appropriate, to increase the impacts and efficiency of SEVIEW programs. Each SEVIEW program identified key indicators of success that contributed to the development of an evaluation plan and logic model. The ETC supported the funded programs in the development of their evaluation plans and logic models, ensuring a conceptual link between their specific activities and expected outcomes.

Working with SEVIEW's Principal Investigators and key project staff, the evaluation consultant developed short-, medium-, and long-term benchmarks for each program, identified specific data sources, defined the indicators for each of the activities and utilized that information in the development of the logic model. The evaluation plan served as a focus and guide for each program, promoting transparency, reinforcing expectations, and providing quality assurance throughout program implementation. Individual program evaluations provided data for the overall evaluation of the SEVIEW project. In addition to collecting, analyzing, synthesizing, and reporting benchmark and quality improvement data, the evaluation consultant worked closely with all SEVIEW programs to facilitate use of these data in their respective research-related efforts. The evaluation was based on the following goals and objectives:

GOAL A – Integrate MUSC's model initiatives focused on health disparities into the Southeastern Virtual Institute for Health Equity and Wellness (SEVIEW) by identifying programmatic synergies and streamlining administrative processes.

- **OBJECTIVE A1:** Establish a single Administrative and Coordinating Core to oversee logistics, financial transactions, regulatory compliance, and bi-directional communications.
- **OBJECTIVE A2:** Establish an Evaluation and Tracking Core to monitor SEVIEW activities and provide timely feedback to the Principal Investigator, Initiative Directors and TATRAC to improve program quality.

GOAL B – Develop strategic partnerships and programs to reduce health disparities.

- **OBJECTIVE B1:** Establish an educational program to reduce health disparities focused on increasing awareness of health issues in communities that bear a disproportionate burden of chronic diseases, and address educational deficits related to chronic diseases.
- **OBJECTIVE B2:** Establish a preventive medicine, health and wellness program to reduce health disparities that will expand proven strategies and/or develop novel methods to engage communities and remove barriers to effective healthcare.

By achieving these goals, SEVIEW aimed to (1) increase awareness of the underlying causes of chronic diseases in the region, (2) develop novel methods to engage communities in the prevention and treatment of chronic diseases, (3) develop community-based services and research initiatives focused on chronic diseases and socioeconomic factors, and (4) develop youth-based, active and interactive, electronic modalities to increase the prevention, detection and treatment of chronic diseases.

IV. METHODOLOGY

A. DESIGN

The evaluation design for Phase I of the SEVIEW program is descriptive, utilizing a mixed-methods approach with quantitative and qualitative data collection and analysis.

B. EVALUATION METHODS

The evaluation focused on the processes and outcomes of the activities, measured against the benchmarks, within each project strategy. Process evaluation examined how each program was implemented, while the outcome evaluation focused on whether program's objectives were achieved. The Evaluation Logic Model served as a guide for each of the SEVIEW programs, providing them with a list of activities and indicators at each stage of the evaluation. The SEVIEW Evaluation Logic Model is based on a compilation of the Logic Models developed for each of the SEVIEW programs. Both qualitative and quantitative methods were used to determine if these programs were reaching their short-, medium-, and long-term objectives, as delineated in the Logic Model. Qualitative methods included document reviews of quarterly reports, minutes from bi-monthly meetings, key informant interviews, focus groups and observations. Quantitative methods included surveys to identify growth on key indicators in line with the goals and objectives of each program and SEVIEW as a whole.

1. Process Evaluation

Process evaluation documented the implementation of the project. This included identification and integration of the individual programs into the overall SEVIEW project. The process evaluation focused on the who, what, where, when, and how through analysis of detailed information about the design, implementation, functioning, and services delivered by SEVIEW and program staff. Data collection methods included document reviews of quarterly reports, and minutes from meetings, key informant interviews, and observations. Data and information from the process evaluation were used to provide service-improvement feedback to the programs concurrently and examine day-to-day operational functioning as well as the degree of fit between the program, as designed, and the program as delivered (fidelity of implementation). Lastly, a tracking mechanism was used to examine the adequacy of staffing and service delivery to participants.

2. Outcome Evaluation

The outcomes for the evaluation were divided into short-, medium-, and long-term objectives. Short-term objectives focused on increasing the knowledge base of the participants, medium-term objectives strived for behavior changes, while the long-term objectives targeted overall program impacts.

The process and outcomes evaluations in combination were critical in determining progress towards successful implementation of the programs. For example, qualitative data focused on pre- and post-implementation activities, such as delivery of training and assessment of curriculum while quantitative data examined attendance documents for participation rates and surveys completed by the Principal Investigators heading the 14 programs.

C. Data Plan

Both qualitative and quantitative data were collected during program implementation and after service delivery. Analysis of varied modalities and data sources were critical to understanding how the programs were implemented, what obstacles hindered, and what factors facilitated progress toward achieving the desired outcomes. Each SEVIEW program was evaluated using the logic model and evaluation plan its personnel had designed for its specific purpose and priorities. The Principal Investigator of each program completed a survey instrument providing data and feedback on their respective programs, which was then compiled to form the foundation for the overall Phase I evaluation. Data were analyzed using standard statistical software to provide descriptive and inferential statistics.

D. Survey Instrument

A survey instrument was developed to document the activities and outcomes of SEVIEW-funded programs and administered using the online platform Survey Monkey®. All 14 Principal Investigators were asked to complete the survey and all complied, resulting in a 100% response rate. Additional open-ended questions were developed to assess accomplishment of overall goals and highlight complementary initiatives in instructional and outreach activities, health care delivery, prevention and policy. By collecting both qualitative and quantitative data, the survey furnished a broad range of responses concerning each program's actual activities, target populations, implementation, critical successes and challenges. This information provided evidence of the short-, medium-, and long-term outcomes delineated in the logic model.

V. PRINCIPAL FINDINGS

A. Process Evaluation

The process evaluation focused on the ability of the funded-programs to implement the initiatives and activities as planned. Data for the process evaluation was mined from the online survey completed by each of the Principal Investigators, as well as quarterly and annual reports, feedback from the monthly meetings, and information gleaned from interactions between the program staff, SEVAC, and the consultants.

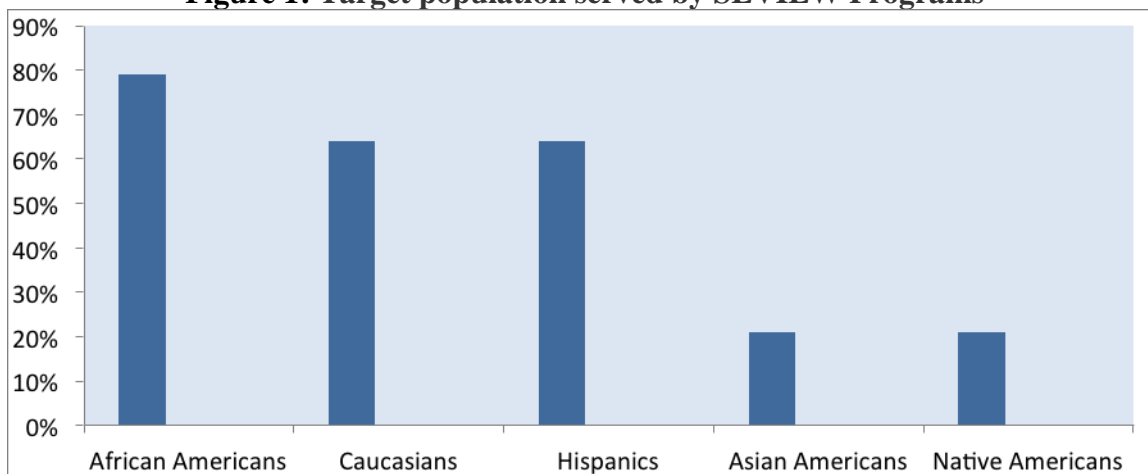
1. Targeted Geographical Areas

SEVIEW programs covered an extensive area of the eastern part of SC. The major communities included Charleston (50%), Williamsburg County (50%), the I-95 Corridor (36%), Coastal Carolina (29%), Johns Island (29%) and the other Sea Islands (21%). Slightly more than half of the programs were targeted to rural communities (57%) compared to urban areas (43%).

2. Population

All racial groups in SC participated in SEVIEW programs and most of the programs targeted more than one group. Seventy-nine percent reported that African Americans were the primary target, followed by Caucasians (64%), Hispanics (64%), Asian Americans (21%), and Native Americans (21%). **Figure 1** shows the breakdown by race and ethnicity. Within these groups, more than half of the programs targeted low income (60%) and medically underserved populations (55%).

Figure 1: Target population served by SEVIEW Programs



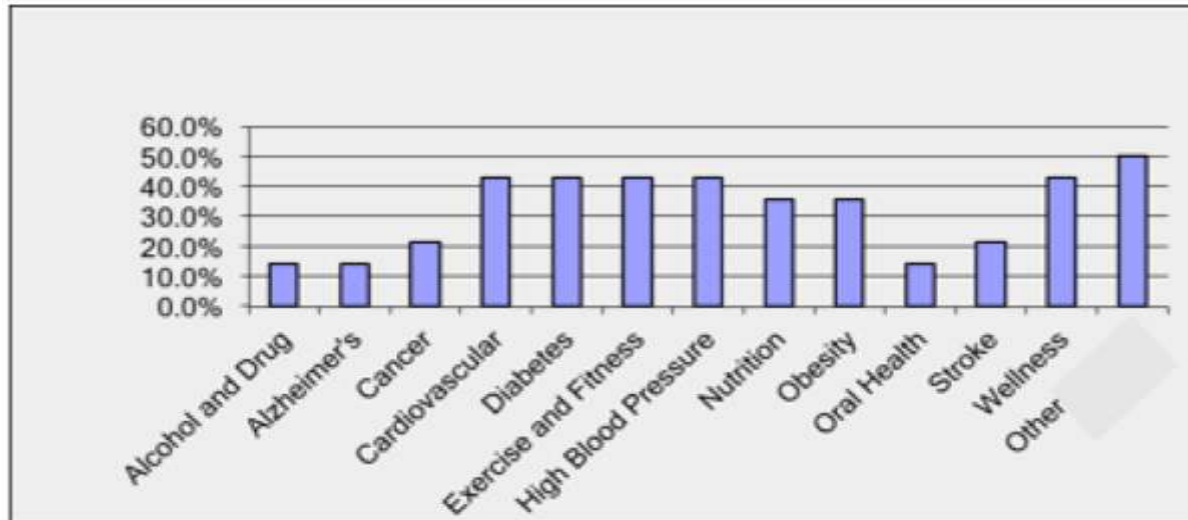
Other categories identified by respondents included adolescents, the elderly, individuals with low health literacy, school children, obese children, parents, and young adults, and community leaders. Approximately one third of the programs served all of these constituencies.

3. Health Conditions and Program Activities

One of the overall objectives was to target chronic diseases and health conditions in the specified geographical areas. SEVIEW programs covered a number of disease categories and health conditions, with Diabetes (43%), cardiovascular disease (43%) and high blood pressure (43%) cited most frequently by the

programs. The high priority health conditions were obesity (36%) and nutrition (36%). In addition to these health conditions, some programs addressed spinal cord injury, disabilities, metabolic syndrome, and dyslipidemia through their activities. Programs also reported preventive activities such as exercise and fitness (43%), wellness (43%) and a focus on social determinants for improving health outcomes. **Figure 2** shows the breakdown of the health conditions targeted by SEVIEW funded-programs.

Figure 2: Health Conditions Targeted by the SEVIEW Programs



More than 44 activities were implemented by SEVIEW programs to achieve objectives and engage participants. The activities most frequently employed were health education (64%), outreach (64%), prevention (57%), behavior change (57%), community engagement (57%), health screenings (57%), research (57%), training (57%), and health promotion (50%). As is evidenced in **Table 2**, many programs utilized the same strategies for the different targeted health conditions resulting in significant overlap, which explains the similarities in these numbers.

Table 2: Selected activities included in SEVIEW Programs

Program Activities	Percentages/ Number	Program Activities	Percentages/ Number
Health Education	64/9	Gap Assessments	36/5
Outreach	64/9	Health Evaluation	29/4
Prevention	57/8	Communication Strategies	29/4
Behavior Change	57/8	Consultation	29/4
Community Engagement	57/8	National Conference	29/4
Training	57/8	Treatment Services	29/4
Health Screening	57/8	Electronic Medical Records	29/4
Research	57/8	Instructional	29/4
Networking	57/8	Wellness Workshops	29/4
Health Promotion	50/7	Policy	21/3
Health Care Service Delivery	43/6	Radio Broadcast/	21/3
Exercise & Fitness	43/6	Cultural Exchange	21/3
Public Awareness Campaigns	43/6	Wellness Councils	21/3
Mentoring	36/5	Web & Internet Activities	21/3
Referrals	36/5	Weight Loss	21/3

Participatory Research	36/5	Medical Visits	14/2
Physical Assessments	36/5	Health Career Academy	7/1

4. Program Outcomes

Program outcomes targeted in this evaluation focus on the achievement of the goals and objectives stated in the evaluation plans of the individual programs as reflected in the opinions the 14 Principal Investigators (PIs).

All the PIs reported that their programs achieved their stated goals and objectives (100%), achieved the level of service and activity that they expected (100%), and delivered the programmatic and curricular activities as intended (100%). They attributed this very high success rate to the support provided by the Administrative Core, program personnel, and to community collaboration. The Principal Investigators concurred that the partnerships forged and the changes the communities made created expanded opportunities to deliver needed services to more participants.

Ninety-two percent of the 14 PIs confirmed that their programs achieved the expected levels of participation, which is a substantive achievement. The PIs whose programs did not reach the expected participation level attributed the shortfalls to political influence in community organizations, insufficient funding, and difficulty obtaining IRB approval and in enrolling participants. **Table 3** provides a summary of responses related to program outcomes.

Table 3: Outcomes of SEVIEW Programs

Area	% Yes	% No
Goals and objectives achieved	100	
Improved access to healthcare	100	
Achieved level of service and activity	100	
The curriculum/program was delivered as intended.	92	8
Improved quality of services	92	8
Expected level of participation	92	8
Improved funding opportunities	83	
Documented changes in knowledge	77	23
Received funding	70	
Documented changes in behavior	62	38
Unintended Outcomes	54	46

5. Program Satisfaction

The programs were asked to report on the satisfaction level of their respective participants/clients with program activities. Program staff gathered this information from participants using survey tools, focus groups and other data collection methods. Those results are contained in the individual reports submitted by the 14 programs (see FINAL REPORT). In response to questions about their own level of satisfaction with SEVIEW, the Principal Investigators rated the support from MUSC and SEVAC very highly. They also reported a high degree of satisfaction with the technical assistance they received during the IRB process, but expressed frustration with the lengthy, tedious process required to obtain IRB approval. **Table 4** summarizes the Principal Investigators' levels of satisfaction.

Table 4: PI Satisfaction with Program Activities and Support

Overall Level of Satisfaction:	Very	Not
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	Satisfied	Satisfied
Level of satisfaction with program activities	92%	8%
<i>Satisfaction with the Level of Support from MUSC:</i>		
Administrative Core	100	
MUSC Administration	100	
SEVIEW	100	
Technical Assistance from IRB	100	
Target Community	100	

6. Barriers and Facilitators to Project Implementation

The barriers encountered by SEVIEW programs were few but complex. Most challenging was the process of obtaining separate IRB approvals from two agencies with different requirements, specifically MUSC and the Telemedicine and Advanced Technology Research Center (TATRC). TATRC, a network of public-private partnerships working together to improve military-civilian healthcare, operates under the auspices of the Department of Defense. It proved time-consuming to satisfy TATRC's regulatory requirements. According to the Principal Investigators, the first response after initial submission took an average of three months from MUSC-IRB and six months from TATRC-IRB. On average, the PIs needed to go through three revisions for MUSC and one for TATRC. They attributed this barrier to multiple layers of bureaucracy and granular detail each agency required. Below is a brief summary of IRB-related issues that caused confusion and/or delay in the execution of programmatic goals:

- Access to medications needed by projects for their research activities.
- Delays in agreement on working definitions of activities needed for disease management and innovative healthcare.
- Training and definition of the role of projects and researchers with clinical automation and work with collaborators (state, federal, corporate and community to resolve issues such as availability, timely diagnoses, quality assurance, etc.)
- Military requirements that impeded development of plans to include military personnel in health disparities research and activities.
- Exclusion of mental health topics from Wellness Workshops.

Personnel issues involving staff hiring and early resignations also presented challenges. To a lesser degree, barriers related to funding, politics, enrollment, HIPAA regulations, and difficulties with technology and medical devices hampered full implementation.

The Principal Investigators identified MUSC leadership and staff, community members, and community organizations as the elements most crucial to the project's full implementation. Communities that were fully engaged in SEVIEW programs supported the activities and initiatives through robust partnerships and promotion among their members. SEVIEW programs reported partnering with more than 80 entities including federal, state, and local agencies, corporations, nonprofits, food banks, senior centers, schools, universities, fraternities and sororities, and professional associations. It is anticipated that these relationships will strengthen and sustain aspects of the programs even after SEVIEW funding has ended. It is also promising that several programs sought and successfully acquired supplemental funding from additional sources (see Final Report for details). This enhanced the overall efforts and exponential impacts of SEVIEW, and bodes well for sustainability.

Lastly, the sharing of resources, feedback, and support between the 14 SEVIEW-funded programs were influential factors that propelled SEVIEW forward despite setbacks or delays.

B. OUTCOMES EVALUATION – SEVIEW PROGRAMS

The Outcomes Evaluation explores the extent to which each of the SEVIEW programs achieved the overarching goals and objectives the project set forth. Results were compiled to reflect the overall progress of SEVIEW rather than individuated reports by program, as the Principal Investigators have concurred that the programs achieved the majority of their respective objectives.

1. Knowledge Change

The Principal Investigators were asked to document any changes in the knowledge base of the persons served by their respective SEVIEW programs. Eight reported that they saw changes in the knowledge base of their clients/constituents, and these were documented in quarterly reports, minutes of meetings, and campus/community-based evaluation data. Some of these data were collected in surveys, pre- and post-assessments, and gleaned from focus groups. Among the reported changes were expanded knowledge and more accurate information about lifestyle management, diabetes care, breast, cervical, and prostate cancer, and their symptoms. For example, MUSC students, serving as instructors and mentors to teach and model healthy behaviors, were able to track and document improvement in program participants' eating and exercise habits. Teachers also observed more motivation in students who increased their participation in exercise programs and pedometer competitions.

According to healthcare providers, more adult clients accepted the need for treatment compliance and the importance of dietary changes. Participants in the SC Diabetes Management Initiative demonstrated improved diabetes knowledge scores on standardized assessment tools, and MOVENUP participants showed increases in cancer knowledge following implementation of the project.

2. Behavior Change

Behavioral change was reported by seven of the Principal Investigators. Reported changes included participants reaching clinical goals and positive physical shifts related to changes in body composition, laboratory results, and BMI. Improvements in daily blood sugar monitoring and increased use of 911 and TPA for strokes were also documented. Parents who engaged in physical activities and participated with youth in yoga and cardio kickboxing showed increases in healthy indicators. Family Workshops delivered by MUSC dietetic interns produced reported behavior changes through education on such topics as "Limiting Sugar Sweetened Beverages," "Heart Healthy Cooking," "Grocery Shopping on a Budget," and "Healthy Summer Grilling."

Additionally, SEVAC reported substantive changes in the collegiality and camaraderie among the Principal Investigators themselves, and within and between programs. This positive shift was documented in quarterly and annual report narratives.

3. Improvement in Access to Services

All Principal Investigators affirmed that their programs improved access to services for their targeted populations. Through community partnerships and networking SEVIEW programs increases service access and identified additional services to address participants' needs. All SEVIEW programs reported improved access to administrative services such as grants and accounting, public relations, and marketing. The programs also benefitted from access to expertise in strategic planning, program evaluation, facilitated leadership development, and efficient utilization of MUSC-IRB.

Several programs improved access by increasing the number of clinical sites in their service delivery areas. Similarly, increasing the number of mentors available for students was a direct result of program expansion to other SC schools. Obese female students who had reported not participating in physical activity because they lacked properly fitted clothing benefitted from donations for custom-fitted clothing/interior garments to support increased physical activity. Improvements in disease management helped patients utilize technology to ensure medication dosage accuracy, which helped improve diabetic patient care.

Increases in screening services for addiction services, mammograms, cervical and prostate cancer screening and navigation services resulted in referral increases as well. Improved 911 use and hospital arrival

for stroke victims, establishing telemedicine as a viable alternative for rural health care, are additional ways the SEVIEW programs improved access to services.

Heart Health Initiative increased clinical sites from one to five, and added four additional telemedicine sites. The Diabetes Management Initiative provided real-time management by titrating medications based on readings uploaded to a device in the hands of a nurse case manager, thereby improving efficiency of care for patients with diabetes.

4. Improvement in the quality of services

The SEVIEW Principal Investigators indicated that the service expansions and interventions they were able to implement as a result of increases in staff or training helped improve the quality of service to their targeted populations. For example, the Lean Team Initiative trained instructors to recognize when their students were not physically fit and introduce them to specific nutrition and exercise suggestions. This instructor training broadened the program's scope and led to increased recognition, screening and timelier service delivery to more at-risk youth. In essence, programs documented that they provided more comprehensive services to more participants at more locations. Participants who were screened and found to have abnormal results were helped by patient navigation services that moved them more efficiently through the system, thus improving the quality of their treatment experience. Patient safety and attention, embedded in clinical care and educational programs, improved the overall quality of the services provided.

5. Synergies

As a result of SEVIEW program activities, several productive synergies developed amongst investigators, supporting staff, junior faculty scholars and community constituents. These relationships promoted collaborative action and mutually beneficial ways that facilitated the robust implementation of community-based research and services. SEVIEW stakeholders partnered to gain grant funding, boost access to information, and advance their expertise on health care access. The partnerships supported more effective delivery of services in communities with unmet need, making use of unlikely but logical locations such as blood pressure screening at food distribution sites. The partnerships forged under the auspices of SEVIEW empowered hospital- and university-based programs to run independently in community settings. Programs that partnered with institutions, schools, and other community entities are now well positioned to proactively sustain partnered delivery of services in response to identified needs.

The reported improvements in daily blood sugar monitoring, medication adherence and food choices reported by the Principal Investigators suggest that participants were adopting healthier lifestyles and taking more responsibility for their own health. Increased access to convenient ambulatory care will ultimately reduce overuse of emergency rooms and ensure that treatment is initiated earlier in the progression of debilitating health conditions.

SEVIEW Principal Investigators were confident that their respective programs had made substantive contributions to the communities they served. On a scale of 1 to 4 with 1 being “no impact” and 4 representing “significant impact,” they cited increased access to health care services (69%), adaptation of healthy lifestyles (54%), and access to affordable healthcare (54%) as most impactful. **Table 5** provides a summary of SEVIEW program contributions according to the PIs.

Table 5: Contributions of SEVIEW Programs

Area	No Impact – %	Significant Impact %	N/A %	Total (N)
Adaptation of healthier lifestyles	0	54	15	13
Impact of clinical automation	8	16	33	12
Increased access to affordable health care	0	54	15	13

Increased access to health care services	0	69	8	13
Increased access to medication	8	25	8	12
Reduction in health risk indicators	0	38	15	13

6. Research Productivity

SEVIEW funded-programs produced benefits for the research community. Community organizations and partners learned more about the research process, methods and, ultimately, the value of research. Among the program participants who were diagnosed and treated, many agreed to participate in and support future research endeavors involving their health conditions. This kind of constituent support is critical for community-based, participatory research, especially in low-income and minority communities where enrolling participants in trials has been more challenging. The involvement of several South Carolina HBCUs in SEVIEW programs bolstered the researcher/community connection. This was accomplished through SEVIEW's proactive recruitment and development of young researchers of color to accurately reflect the demographics of the participating communities.

For instance, through the South Carolina Collaborative Undergraduate HBCU Student Summer Training Program, 12 students from three HBCUs will be trained over three years in research design and methods fundamentals, and four HBCU students per year will be placed in prostate cancer research-related jobs. By conducting research and publishing their findings in scientific journals, these HBCU scholars have important opportunities to increase their scientific resumes and professional profiles.

SEVIEW programs have broadly disseminated their research findings in peer-reviewed journals and magazines, and key stakeholders have presented at professional associations and community meetings, contributing to the credibility and stature of SEVIEW in the community. A list of publications by SEVIEW-associated authors can be found under "Research Productivity" on page 49 of this report.

SEVIEW programs have attracted additional funding in support of their current activities or to extend components of these activities into the future. Nine Principal Investigators affirmed that their involvement in SEVIEW had "definitely" improved opportunities for future funding. The PIs who received additional funding attributed this support to the stature and scope of their SEVIEW-related activities. Examples include nine follow-on grants generated by the CES program amounting to a total of \$6,344,358. The Junior Faculty Development secured funding from the American Academy of Pediatrics for faculty development. An Achieve Grant, in collaboration with SCDHEC and the City of North Charleston, was also received, and the Yaschik Foundation provided funding in 2013 for online curriculum in Spanish.

7. Media Activities

Several projects had media components as part of their project objectives, while others engaged media activities for reporting or public awareness. MUSC-PICO provided "Made for TV Dialogues" that were well received by immediate audiences and recognized for broadcasting excellence. "Closing the Gap in Healthcare," a South Carolina television show on health disparities, featured several SEVIEW programs and numerous SEVIEW PIs participated in radio and television interviews. SEVIEW's website offers a user-friendly gateway to the virtual institute's offerings while its social media presence ensures that SEVIEW remains an integral voice in the conversation on Facebook, Twitter, Pinterest and other platforms. SEVIEW's media involvement is further detailed in the Appendix.

8. Innovative Health Care

Half of the SEVIEW Principal Investigators reported that their programs "definitely" delivered on the promise of discovering innovative health care and implementing capacity-building solutions to the communities

they served. As highlighted in **Table 6**, more than three quarters (75%) agreed that their respective programs delivered innovative health care.

Table 6: Innovative Health Care

Area	Somewhat	Definitely	Total
Discovered innovative health care	8%	50%	12
Delivered innovative health care	8%	75%	12
Implemented community capacity building solutions	0%	58%	12
Other (please indicate below)	0	100%	2

“Providing a Medical Home for Underserved Children in Williamsburg County” is an excellent example of a SEVIEW success in capacity building. This program uses telemedicine to extend and enhance this rural, underserved county’s healthcare infrastructure. SEVIEW-funded programs created synergies that attracted more than \$30 million in funding from the state legislature for MUSC to further develop Tele-health, resulting in the expansion of school-based Tele-health programs. Planning is underway to incorporate all schools in Williamsburg County, including preparing clinic space for the installation of telemedicine technology. Through this endeavor, the additional counties of Bamberg and Sumter were also engaged to participate.

Collaborations have been initiated with other state entities and care providers to determine appropriate directions for strategic expansion of this service into school-based care. Tele-health is now playing a pivotal role in augmenting healthcare services and is positioned to contribute significantly more to SEVIEW efforts to alleviate health care disparities and improve health care access.

9. Military Contribution

Among the South Carolina communities struggling with hypertension, obesity and diabetes are many young people of military age. The prevalence of these debilitating conditions significantly reduces the pool of healthy potential recruits and has resulted in higher rates of rejection than desired for those willing and applying to serve. One of the primary mandates of the SEVIEW multi-year grant from the DOJ is to undertake projects that raise public awareness about the issue of chronic disease and develop ways to engage young people in prevention programs with the aim of increasing the physical fitness of military-age individuals.

SEVIEW Principal Investigators were confident that the outlook on the fitness and readiness of military age young people in South Carolina will improve as the targeted delivery of innovative prevention activities and health education to this population continues. The results, though not immediate, are expected to have a growing impact on successive generations as more South Carolinians adopt healthier lifestyles and pass those values onto their offspring. SEVIEW programs imparted a wealth of information that is influencing how young people regard their health and has engaged them in behavior changes that will have durable impacts.

Below is a brief summary of some of the short- and medium-term benchmarks associated with improved health outcomes for youth that SEVIEW programs achieved:

- Trained health professionals have seen more patients.
- Young people are showing more interest in their own health status.
- Young people have begun to track their eating and exercise habits.
- More young people are educating families and friends, about healthy eating and exercise.
- More young people are participating as student mentors, teaching other youth about healthy choices and ways to improve their diet and physical activity.
- More teachers and parents are participating as mentors.
- More teachers are participating in exercise programs and nutrition classes.
- More parents are actively participating in workshops and family health activities.
- Partnerships have been forged with local middle school J-ROTC instructors to deliver a leadership program in collaboration with MUSC Student Mentors.

The inclusion of ROTC educators and mentors at the 6th and 7th grade level is key to influencing youth at earlier developmental stages. SEVIEW efforts to prevent childhood obesity targeted youth directly through education and indirectly through other “influencers” such as teachers, parents, and the community. By providing activities that improve fitness and health awareness, SEVIEW programs are laying the groundwork for the growth of a healthier pool of potential recruits in the future. Follow-up studies of these students and adolescents as they mature into adulthood are recommended to determine the true impact of SEVIEW interventions.

C. OUTCOMES EVALUATION - SEVIEW

This section focuses on the achievement of the goals and objectives set forth overall by the SEVIEW project. Each of the 14 funded programs fit under one of three areas of SEVIEW concern: 1) Education 2) Preventive Medicine, Health and Wellness Program and 3) Community Partnerships and Outreach.

Goal A: Integrate MUSC’s model initiatives focused on health disparities into the SEVIEW by identifying programmatic synergies and streamlining administrative processes.

- **OBJECTIVE A1:** *Establish a single Administrative and Coordinating Core to oversee project logistics, financial transactions, regulatory compliance, and bi-directional communications.*
- **OBJECTIVE A2:** *Establish an Evaluation and Tracking Core to monitor SEVIEW activities and provide timely feedback to the Principal Investigator, Initiative Directors and TATRAC to improve program quality.*

Goal A of the Phase I component of SEVIEW was accomplished at the outset when the leadership established the Administrative Core by hiring staff and identifying Principal Investigators, consultants and community leaders to serve in an advisory capacity. The consultants included Thomas Gordon, Ph.D., who led the strategic planning, Jennifer Friday, Ph.D., who took charge of evaluation and tracking, and Garcia Williams, heading up marketing and public relations. As the Evaluation and Tracking Core consultant, Dr. Friday worked closely with the leadership team of each of the 14 programs to effectively:

- Develop their respective logic models
- Identify key success indicators and measures for their projects
- Develop evaluation plans and a framework for SEVIEW overall
- Keep performance indicators and data collection focused on measures of success
- Demonstrate the value of increased effectiveness and efficiency
- Utilize quality improvement methods to achieve evaluation aims
- Utilize evaluation data

Goal B: Develop strategic partnerships and programs to address the burden of health disparities.

- **OBJECTIVE B1:** *Establish an Educational Program to reduce health disparities: Program initiatives will focus on increasing awareness of health issues in communities that bear a disproportionate burden of chronic diseases, and address educational deficits related to chronic diseases.*

- **OBJECTIVE B2:** *Establish a Preventive Medicine, Health and Wellness Program to reduce health disparities: Program initiatives will expand proven strategies and/or develop novel methods to engage communities, and remove barriers to effective healthcare.*
- **OBJECTIVE B3:** *Establish Community Partnerships and Outreach Programs to reduce health disparities: These activities will provide the foundation for integrated efforts to address chronic disease burden in populations that could provide talented recruits for military service, and disseminate evidence-based research findings.*

B1: Educational Programs

SEVIEW programs focused their initiatives on communities that bear a disproportionate burden of chronic diseases by addressing educational deficits about these health issues. SEVIEW programs linked to this goal include:

- MUSC Public Information and Community Outreach Initiative (PICO)
- Community Institutes for Traditional and Nontraditional Leaders
- Administrative Core

These programs achieved the level of participation they set forth and delivered the services and activities outlined in their goals and objectives. They experienced barriers similar to those reported by all the SEVIEW programs such as funding shortfalls and regulatory requirements that contributed to unexpected delays. These programs successfully documented changes in the knowledge base of their participants and addressed all the health conditions cited earlier with the exception of Alzheimer's disease.

SEVIEW co-investigators and supporting staff expressed satisfaction with the enhanced knowledge acquired through information exchanges during bi-monthly meetings, participation in community leadership institutes, the SEVIEW co-sponsored national conference on health disparities and other SEVIEW jointly sponsored activities and initiatives. Additionally, SEVIEW co-investigators enhanced their understanding of the contrasting yet complementary contributions of quantitative and qualitative research methods that SEVIEW modeled.

Quarterly report narratives, minutes of meetings, and campus/community-based evaluation data provide evidence of increased collegiality and collaboration among SEVIEW co-investigators and across programs. Principal Investigators, supporting staff, junior faculty scholars, and community constituents demonstrated a willingness to act in ways that were mutually supportive and beneficial.

For example, MUSC—PICO, the Community Institutes for Traditional and Nontraditional Leaders, and the Administrative Core worked together to produce the health series, “Made-For-TV Dialogues” and another one-hour program, “Our Nation’s Health: A Focus on Social Determinants and Zip Code: Your Neighborhood, Your Health.” This television dialogue, moderated by CNN’s John King, explored the impacts of social determinants (e.g., poverty, environment, education, public safety, housing, health care) can have on health disparities. It was broadcast on ETV into approximately 25,000 homes statewide and in the neighboring communities of Charlotte, NC, and Savannah and Augusta, GA. The National Educational Telecommunications Association (NETA) promoted and distributed the program to its television affiliates nationwide. Subsequently, the program aired in 93 markets nationwide, reaching approximately 1.5 million households in 2013. ETV and MUSC, the U.S. Department of Energy, the U.S. Department of Defense (SEVIEW) and South Carolina State University distributed DVDs of the program to key stakeholders and interest groups, resulting in an initial distribution of approximately 300 DVDs, with further distribution as requested.

The Administrative Core’s Health Careers Academy forged partnerships with area elementary, middle, and high schools to provide classes to students, reach out to parents, and broaden the mentor base through expansion to other schools across the state. The Academy also increased the number of MUSC students delivering program content to young people in the community. The Junior Faculty Scholars program of the Administrative Core provided research and training opportunities to junior faculty members at MUSC. For

example, Dr. Debbie Bryant completed the Doctor of Nursing program at MUSC and was promoted to Director of Partnerships for Healthcare Quality Research at MUSC. Dr. Ida Spruill received the 2012 Presidential Early Career Award for Science and Engineering, and was promoted to Associate Professor at MUSC. The third Junior Faculty Scholar, Monique Hill, MSW, was promoted to Assistant Professor.

B2: Preventive Medicine, Health, and Wellness Program

SEVIEW's mandate to establish a Preventive Medicine, Health and Wellness Program to reduce health disparities (Goal B2) relied on proven strategies to engage communities and remove barriers to effective healthcare. SEVIEW-funded programs linked to this goal include:

- Stroke Risk Reduction Initiative (SRRI)
- Heart Health Initiative
- SC Tele-Support: Diabetes Management Initiative
- Tele-Critical Care Program to Reduce Health Disparities (CREST)
- Telemedicine in the Evaluation of Alzheimer's disease in a Rural, African American Population

These programs focused mainly in the research and treatment arena addressing all the disease conditions with the exception of Cancer (school children and teachers also were not targets of these preventive medicine programs)

Nine of the PIs reported that the expected level of participation for their programs was achieved. Programs that fell short, for example the SC-Tele-Support Diabetes Management Initiative, indicated that funding was insufficient to reach their targets. They all achieved their service delivery goals and reported that with additional funding they could have exceeded the participation levels. These programs reached over 10,000 participants and were able to deliver their services as intended. Technical issues with equipment and staff limitations prevented some of the programs from delivering the level of services originally projected. Challenges that interfered with implementation include the realization that the program's proposed scope was overly ambitious and would need to be scaled back. Programs also reported some operational issues and cultural barriers with the populations that they were serving.

Major benchmarks for these SEVIEW programs were the development of health care sites that supported preventive medicine, health, and wellness, including:

- *Merging of the Live Oak facility with Palmetto Primary Care, including a new EMRS.*
- *Establishing an EMRS that serves as a system-testing site to determine the efficacy of further expansion. This restored community confidence and raised the standards and expectations of both staff and community residents.*
- *Merging of Black River Healthcare, Inc. into Hope Health, Inc. with retention of 90-95% of staff and a fully functional EMRS.*
- *SEVIEW-coordinated programs brought health promotion activities and preventive services across the lifespan to the citizens of Williamsburg County.*
- *A Community Transformation Grant brought together the Diabetes Coalition, Farmer's Market, Community Gardens, Arthritis Foundation, National Institutes of Health, American Heart Association, American Stroke Association, National Stroke Association, National Kidney Foundation, Clemson Extension Services, the Cancer Collaborative, MUSC, and the Hollings Cancer Center to work collaboratively on promoting good health and increase use of preventive services.*
- *Increase in early detection of acquired cardiovascular disease through non-invasive imaging, a key topic of interest with major public health implications, particularly among obese children and adolescents with metabolic syndrome.*
- *Workshop on the Prevention, Assessment, and Treatment of Childhood Obesity presented at the 2013 MUSC Frontiers in Pediatrics Heart Health, expanded 300% in the past four years and continues to serve primarily low-income minority families.*

- *Expansion into an American Academy of Pediatrics Stage 4 (tertiary care) comprehensive pediatric obesity program, now serving four communities within the MUSC catchment area, with telemedicine services for rural families.*

SEVIEW evaluated program data and identified an important volume/outcome relationship for patients with sepsis and ventilator-dependent respiratory failure. The data showed that patients cared for in higher volume hospitals had better outcomes than patients cared for in lower volume hospitals. Additionally, patients transferred from smaller to larger hospitals were found to have especially poor outcomes. Further analysis of the data revealed large variations in the risk of death for sepsis patients. As a result of this finding, the investigators developed a multivariable model able to predict a patient's risk of death during admission based on the patient's age, presence of complex co-morbid conditions, need for ventilator care, and presence of shock at admission. Several other studies that mined the data resulted in efforts to develop procedures and treatment modalities to better serve South Carolina communities. For example:

- *Identifying high-risk patients in smaller community hospitals who are appropriate for early transfer to specialty hospitals for advanced care has the potential to improve care for African-Americans and veterans.*
- *Using SCORS administrative hospital data, the study found that Ventilator-Dependent Respiratory Failure patients transferred early had a significantly improved chance of survival. Application of this finding would benefit African-American patients who are at greater risk of death under these conditions than white patients.*
- *Initiated a descriptive data analysis to confirm that telemedicine assessments were as effective as in person assessments.*

B3: Community Partnerships and Outreach Program

SEVIEW integrated efforts to reach out to those burdened with chronic disease, including military-age potential recruits, and stepped up the dissemination of evidence-based research findings. SEVIEW-funded programs provided beneficial services across age groups in rural and urban settings using a multiple to improve the health status of the communities. SEVIEW programs linked to this goal included:

- Lean Team Initiative
- Community Engaged Scholars Initiative (CES)
- The Health Empowerment Zone (HEZ)
- Healthy People in Healthy Communities
- Mobile Outreach Van Educational and Navigational Health Services for Underserved Populations (MOVENUP)

With health screenings, promotion and prevention activities, these programs addressed all the chronic diseases and health conditions targeted by SEVIEW and served a largely African-American population. The Principal Investigators leading these programs reported achieving the participation levels and delivering the volume of activities set as program goals. Ten of the PIs documented changes in knowledge through focus groups and surveys. However, only five indicated that they were able to confirm behavioral changes in program participants. Although changed behaviors were observed in small group encounters taking place at program sites, behavior changes in the target populations as a whole could not be verified.

While all reported that their programmatic activities improved access to services, fewer Principal Investigators could confirm that quality of service had improved. Seven reported some unanticipated positive developments, including businesses volunteering to collaborate with them and receiving unexpected funding from community sources. The barriers these programs faced were similar to those faced by other SEVIEW programs, including delays due to the lengthy IRB approval process.

The benchmarks used to measure success included participants taking greater responsibility for their health, better weight management, and healthier food choices. The summary below shows the activities and

outcomes achieved by Community Partnerships and Outreach programs in collaboration with community organizations, government agencies, churches, schools and employers.

COMMUNITY ORGANIZATIONS

Community organizations participating with SEVIEW ranged from grassroots organizations to large nonprofits. Specific outcomes from community organization involvement include:

- *Doubled the number of seniors participating in some form of exercise program, walking, dancing and learning about healthier nutrition and food preparation.*
- *Increased interest from participants in knowing and managing their health numbers (blood pressure, blood sugar and cholesterol, etc.)*
- *More activities aimed at supporting healthy habits of grandparents caring for their grandchildren e.g., meal preparation, food shopping, encouraging involvement in grandchildren' school/after-school programs, sport activities and JROTC.*
- *Promoted health fairs, workshops, classes, and health screenings throughout the county. Collaborations led to development of a community garden and organizing with local farmers to host a farmer's market.*
- *Support groups for teens, adult parents, and children that participated in healthy eating classes. Such groups are effective in securing community buy-in and creating new norms for healthier eating in rural communities.*
- *Promoted MOVENUP's cancer education and awareness activities through membership base and network, including fraternities, sororities, clubs and local clinics.*
- *Raising awareness about participating in clinical trials through informed decision-making. Participants who had less favorable perceptions of clinical trials as indicated on pre-test surveys showed more positive perceptions about this endeavor at post-test.*

GOVERNMENT ORGANIZATIONS

Representatives of SEVIEW programs actively pursued the full support and engagement of state and local government officials. Although not entirely successful in this effort, they did secure limited government participation in events such as "Race for the Cure" and "Walk for Stroke." Efforts to get greater government participation have been redoubled with a new strategy focusing on smaller units of government rather than full agency cooperation.

CHURCHES

Faith-based entities worked in partnership with SEVIEW programs to produce the following outcomes:

- *United Methodist clergy welcomed and hosted health-related activities in their churches. Churches received informational handouts and purchased DASH cookbooks to share with their congregations.*
- *Implemented exercise programs and/or walking clubs in churches and disseminated healthy recipes and information about cardiovascular risk factors and warning signs of stroke, heart attack and other chronic diseases.*
- *Offered health fairs to local church members. Follow-up with participants revealed lifestyle changes that resulted in lowered blood pressure, weight loss and improved medication management and compliance. Many were motivated to start fitness routines and healthy eating.*
- *SEVIEW dietician worked within her church and community to provide technical assistance and guidance to the Parent's Anonymous organization, resulting in increased awareness of healthier lifestyle options.*
- *Churches provided exercise opportunities that motivated participants to engage in dancing, Zumba, walking, and aerobics workouts.*
- *Local stakeholders and leaders conducted outreach activities through The ARK to provide health care, food, clothing and spiritual nourishment. ARK screening activities helped identify high-risk persons in need of medications and educated them on practices that could improve their health.*

SCHOOLS

In collaboration with school communities that provide vital access to children and youth, SEVIEW programs delivered prevention services and education material on healthy lifestyles. Progress in this arena included the following:

- *Increased involvement of parents at workshops and meetings focused on developing healthy habits, engaging in physical activity, and the benefits of proper nutrition. Parents engaged in discussions about BMI, developing hypertension and diabetes) at an early age, and how prevention measures related to diet and exercise.*
- *Coordinated support from the superintendent, district nurse, JROTC instructors, parenting and afterschool coordinators, food service directors, principals, teachers, and the WCSC School Board resulted in students getting more physical activity while at school and healthier school lunches.*
- *Action plans to increase healthy habits implemented in childcare centers, resulting in menu changes, more daily physical activities, using recipes from the DASH Cookbook, and encouraging parents to do the same at home.*

EMPLOYERS

Many businesses participated in SEVIEW program activities focused on improving the health of their employees. Employer collaborations with SEVIEW included:

- *Trebol USA, Inc. partnered with SEVIEW on prevention projects in Williamsburg County. The company offered incentives to employees to reward behavior changes, such as seeking treatment and participating in SEVIEW program offerings.*
- *Tupperware offered its gymnasium and on-site nurse for exercise programs, medical care, and medication follow-up. The Tupperware collaboration enhanced employee access to multiple options for health improvement.*

The Principal Investigators of SEVIEW funded projects have also been active in efforts to disseminate the evidence-based findings of their research through publication in peer reviewed journals and presentations at meetings and conferences. Please see Appendix C for a detailed list on this effort.

The lessons learned offer educational, medical, behavioral, and participatory approaches that can be adopted by other communities faced with disparities and lack of equal access to health services. Outreach and partnerships provided the foundation for integrated efforts to address the issue of chronic disease in populations that could, in the future, provide talented recruits for military service. Although much additional work is required, current efforts are making an impact on the communities targeted by the SEVIEW projects.

D. IMPACT EVALUATION

Processes for the evaluation of the long-term impacts of SEVIEW are in place and will be reported on in August 2016 in conjunction with the evaluation of the project's Phase II programs. This impact evaluation will explore the extent to which SEVIEW activities have had beneficial impacts overall on chronic disease reduction, disease prevention, health awareness, and the wellness and physical fitness of the targeted communities. The next report may take the form of a comprehensive case study, supported by uniform quantitative data from Phase II programs. In this manner, the true scope of this multi-site endeavor and its far-reaching impacts can be chronicled. Phase II programs include:

1. Junior Doctors of Health

Designed to prevent childhood obesity in underserved populations by creating "Junior Doctors of Health," to empower children to control their own health and educate others about the benefits of healthy eating and exercise. (Scotty Buff, PhD) <http://www.facebook.com/pages/Junior-Doctors-of-Health/193574517381535?sk=wall>

2. STEER Away from Alcohol and Drugs

Addresses health disparities in access, education and treatment of alcohol use/abuse and drugs in minority, rural, underserved and at risk populations. (Deborah Deas, MD, MPH)

3. **Providing a Medical Home for Underserved Children in Williamsburg County via Telemedicine**
Brings preventive healthcare to children living in an underserved rural area of the I-95 Corridor. (James T. McElligott, MD, MSCR)
4. **Evaluating a Media Strategy - Closing the Gap, Inc. (CGHI)**
Assesses and refines the design, implementation and quality of a health communication strategy utilizing radio broadcasts of health messages to medically underserved populations with low health literacy. (Marvella E. Ford, PhD)
5. **CBPR to Improve Oral Health**
Aims to improve the oral health of a rural, racially and ethnically diverse community by overcoming existing barriers to oral healthcare and building necessary community oral health infrastructure. (Renata S. Leite, DDS, MS)
6. **Patient Risk Assessment and Health Education with Computer Kiosks in Community Health Centers**
Aims to develop, implement and evaluate intervention to increase exposure to health information technology and provide patients with their perceived/actual risk of disease prior to meeting with their healthcare provider. (Vanessa Diaz, MD)

VI. NEXT STEPS AND CONCLUSIONS

The following recommendations are offered as possible next steps the SEVIEW leadership may wish to consider as the project moves forward. Additional training, planning and innovation in the areas below are likely to produce significant outcomes in line with SEVIEW goals:

- Work with military personnel to develop relevant materials and increase participation of current and former military in training and activities. Include examples of military careers increase student interest. Materials should illustrate relevance of healthy behaviors and motivate members to adopt these practices in their own self-interest.
- Prepare materials for parents, teachers and communities that illustrate the relevance of healthy behaviors and integrate these practices at the personal and community levels.
- Include mental health and social health (relationships) in Wellness Workshops.
- Design and offer culturally competent workshops and activities to boost student understanding of and positive regard for opportunities offered by the military.
- Train more role models, especially military or ex-military volunteers who can serve as tutors, mentors, counselors, and coaches committed to reinforcing healthy behaviors (decision-making, conflict resolution, violence prevention, and leadership).
- Engage community organizations in addressing mental health, relationship and self-esteem issues for the targeted communities.
- Facilitate youth retreats focused on conflict resolution, decision-making, violence prevention, and bonding.
- Mount public awareness campaigns about the issues SEVIEW is addressing.
- Utilize the evaluation information to further development the SEVIEW Model.
- Identify funding sources to extend the SEVIEW model in other communities.

It is significant that the Principal Investigators expressed enthusiasm to participate in “*another collaborative project with adequate funding*,” as that “*would present a great opportunity to complete the work started*.” One PI commented that “*the awareness of other programs and the collaboration was the single biggest benefit*,” second only to SEVAC, the centralized leadership support that they all found so effective and helpful. Lastly, a PI described SEVIEW in terms that anchor it in the present and convey the fullness of its promise: “*It is a very valuable effort for building the future*.”

VII. REFERENCES

CDC (November 22, 2013). CDC Health Disparities and Inequalities Report MMWR. Vol. 22, United States.
CDC (2011). Office of Minority Health & Health Equity, Fact Sheet. Accessed: 2/24/2015
Web: <http://www.cdc.gov/minorityhealth/>

O'Connor DP, Lee RE, Mehta P, et al. Childhood Obesity Research Demonstration (CORD) project: Cross-site evaluation methods. *Child Obesity* 2015;11:92–103.

Jean A. King, Frances Lawrenz (Editors), *Multisite Evaluation Practice: Lessons and Reflections From Four Cases: New Directions for Evaluation*, Number 129. ISBN: 978-1-118-04449-0, April 2011, Jossey-Bass.

VIII. RESEARCH PRODUCTIVITY

Publications

Spruill I, Leite RS, Fernandes J, Kamen DL, Ford ME, Jenkins C, Hunt K, Andrews J. (2013) Two Decades of Successes, Challenges, and Lessons Learned: Community Based-Scholarship and Community Engaged Research among the “Gullah” Population of South Carolina. *Int J Community Research and Engagement*. 6(1):150-169.

Andrews JO, Cox MJ, Newman SD, Gillenwater G, Warner G, Winklwer J, White B, Wolf S, Leite RS, Ford M, Slaughter S. (2013). Training Partnership dyads for CBPR: Strategies and Lessons Learned from the Community Engaged Scholars Program. *Health Promotion Practice*. 15(4): 524-533.

Health Resources and Services Administration (HRSA) grant T12HP24722. *The South Carolina Oral Health Safety net Enhancement Portfolio: Improving Access to care through Innovative Oral Health Workforce Approaches* (PI: Martin – Univ of South Carolina; MUSC Co-I: Leite). 2012-2015.

CMS/Civil Money Penalty Funds for Certified Nursing Homes. Facilitating Long-Term Oral Health Skills – FLOSS (PI: Leite). 2014-2015.

Halbert CH, Briggs V, Bowman M, Bryant B, Bryant DC, Delmoor E, Ferguson M, Ford ME, Johnson JC, Purnell J, Rogers R, Weathers B. (2014). Acceptance of a community-based navigator program for cancer control among urban African Americans. *Journal of Cancer Education*.

Health Education Research 2014;29:97-108. Ford ME, Siminoff LA, Pickelsimer E, Mainous AG, Smith, DW, Diaz V, Soderstrom LH, Jefferson MS, Tilley BC. *Unequal burden of disease, unequal participation in clinical trials: solutions from African American and Latino community members*. Also published in *Health Soc Work*. 2013 Feb;38(1):29-38.

Gateways, 6;2014. Ford M, Wahlquist A, Blake R, Green C, Streets J, Fuller E, Johnson E, Jefferson M, Etheredge J, Varner H, Johnson S, Glover S, Turner D, Garrett-Mayer E. Assessing an intervention to improve clinical trial perceptions among predominantly African-American communities in South Carolina. *Prog Community Health Partnerships*, 2012;6:249-63.

Bryant DC, Williamson D, Cartmell KB, Ford M. (2011). A lay patient navigation training curriculum targeting disparities in cancer clinical trials. *Journal of the National Black Nurses Association*, 22:68-75.

Ford ME, Wahlquist AE, Ridgeway C, Streets J, Mitchum KA, Harper R, Hamilton I, Etheredge J, Jefferson MS, Varner H, Garrett-Mayer E. (2011). Evaluating an intervention to increase cancer knowledge in racially diverse communities in South Carolina. *Patient Education and Counseling*, 83:256-60.

- Selassie, AW, Fakhry SM, and Ford DW. (2011). Population-based study of the risk of in-hospital death after traumatic brain injury: The role of sepsis. *The Journal of Trauma, Injury, Infection and Critical Care*,71:1226-1234.
- Zapka JG, Simpson K, Hiott L, Langston L, Fakhry S, and Ford DW. (2013). A mixed methods descriptive investigation of readiness to change in rural hospitals participating in a tele-critical care intervention. *BMC Health Services Research*,13:33. DOI:10.1186/1472-6963-13-33.
- Goodwin AJ, Rice DA, Simpson KN, Ford DW. (2014). Frequency, Cost and Risk Factors of Readmissions among Severe Sepsis Survivors. *Crit Care Med*.
- Goodwin AJ, Rice R, Nadig NR, Simpson KN, Ford DW. (2014). Racial disparities in sepsis incidence and mortality are associated with residence in medically underserved areas. *Am J of Respir and Criti Care Med*.
- Rice D, Goodwin AJ, Simpson K, Ford DW. (2014). Risk factors for 30-day hospital readmissions in sepsis. *Am J of Respir and Crit Care Med*.
- Hayden G, Smith P, Losek J, Ford D, Boylan A, Hall G. (2014). Electronic medical record-based sepsis protocol effectively lowers time to antibiotics in emergency department patients. *American College of Emergency Physicians*.
- Nadig NR, Ford DW, Boylan AM, Goodwin AJ, Zapka J. (2014). Formative survey development to assess perceptions regarding regionalization of critical care services. *Am J of Respir and Crit Care Med*.
- Ford DW, Goodwin AJ, Simpson K. (2013). A sepsis severity-scoring tool for use with administrative data. *Am J Respir Crit Care Med*. 187:A1561
- Goodwin AJ, Simpson KN, Ford DW. (2013). Hospital volume affects mortality and discharge destination in sepsis. *Am J Respir Crit Care Med*. 187:A5329
- Mainous AG 3rd, Johnson SP, Saxena SK, Wright RU. (2013). Inpatient bariatric surgery among eligible black and white men and women in the United States, 1999-2010. *Am J Gastroenterol*. Aug; 108(8):1218-23.
- McElligott JT, Summer A. (2012). Health Care Utilization Patterns for Young Children in Rural Counties of the I-95 Corridor of South Carolina. *Journal of Rural Health*, September.
- North SW, McElligott JM, Douglas G, Martin A. (2014). Improving Access to Care Through the Patient-Centered Medical Home. *Pediatr Ann*. Feb 1;43(2):e33-8.

Presentations

- Leite RS, Heyward J, West L, Carpenter E, Mueller M, Andrews J. *CBRP Approach to Improve Oral Health in Gullah Communities*. MUSC Oral Health Symposium. Charleston, SC. November 21, 2014.
- Sears L, Leite RS. Investigation of Dental Treatment Availability and Approaches to South Carolina's Untreated Medicaid Children. *49th Annual Perry V. Halushka MUSC 2014 Student Research Day*. Charleston, SC. November 13, 2014.
- Gavin J, Diaz VA, Wright R, Player M, Mainous A. Southeastern Virtual Institute for Health Equity and Wellness (SEVIEW): Impact of Computerized Health Assessments Prior to Clinical Visits on Lifestyle

Behaviors. Poster on Research in Progress. *North American Primary Care Research Group Annual Meeting. New York, NY. November 2014.*

Leite RS, Hudson CM, West LI, Carpenter EM, Andrews JO. Assessment of oral health disparities among the Gullah population of Hollywood, SC–Hollywood Smiles. *Aging Research Day. Charleston, SC March 8, 2013.*

Koch K, Hubbard J, Stamatiades G, Mueller M, Leite RS. Hollywood Smiles–An Oral Health Community Based Multi-Level Intervention. *48th Annual Perry V. Halushka MUSC 2013 Student Research Day. Charleston, SC. November 8, 2013.*

Stamatiades GP, Leite RS. Hollywood Smiles Intervention and Handbook: A Post Program Evaluation. *48th Annual Perry V. Halushka MUSC 2013 Student Research Day. Charleston, SC. November 8, 2013.*

Koch K, Hubbard J, Stamatiades G, Mueller M, Leite RS. Hollywood Smiles–An Oral Health Community Based Multi-Level Intervention. *7th Annual National Conference on Health Disparities. St. Thomas, VI. November 13-16, 2013.*

McElligott J. School-Based Clinics and Telemedicine. *South Carolina Tele-health Summit, Columbia, SC. October 10, 2013.*

Summer, A, McElligott J. Health Care Utilization Patterns for High-Risk Young Children in Rural South Carolina. *Poster, Pediatric Academic Society Annual Meeting. Washington, D.C. May 4-7, 2013.*

McElligott, J. The use of Telemedicine in Outpatient Settings. *Moderator, American Telemedicine Association Annual Meeting. Austin, TX. May 5-7, 2013.*

McElligott J. Enhancing Pediatric Primary Care for South Carolina's Children with Telemedicine. *American Telemedicine Association Annual Meeting. San Jose, CA. April 29 – May 1, 2012.*

IX. APPENDIX

Evaluation Logic Model Data Collection Tools

SE VIEW Logic Model

SE VIEW VISION

To develop a nationally recognized multidisciplinary, inter-professional team of researchers, educators, outreach professionals and laypersons to eliminate health disparities.

SE VIEW GOALS & OBJECTIVES

Goal A: Integrate MUSC's model initiatives focused on health disparities into the SE VIEW by identifying programmatic synergies and streamlining administrative processes.

Objectives:

A1: Establish a single Administrative and Coordinating Core to oversee project logistics, financial transactions, regulatory compliance, and bi-directional communications.

A2: Establish an Evaluation and Tracking Core to monitor SE VIEW activities and provide timely feedback to the Principal Investigator, Initiative Directors and TATRAC to improve program quality.

Goal B: Develop strategic partnerships and programs to address the burden of health disparities.

Objectives:

B1: Establish an Educational Program to reduce health disparities: Program initiatives will focus on increasing awareness of health issues in communities that bear a disproportionate burden of chronic diseases, and address educational deficits related to chronic diseases. SE VIEW Projects linked to this goal:

- MUSC Public Information and Community Outreach Initiative (PICO)
- Community Institutes for Traditional and Nontraditional Leaders

B2: Establish a Preventive Medicine, Health and Wellness Program to reduce health disparities: Program initiatives will expand proven strategies and/or develop novel methods to engage communities, and remove barriers to effective healthcare. SE VIEW Projects linked to this goal:

- Stroke Risk Reduction Initiative (SRRI)
- Heart Health Initiative
- SC TeleSupport: Diabetes Management Initiative
- Tele-Critical Care Program to Reduce Health Disparities (CREST)
- Telemedicine in the Evaluation of Alzheimer's Disease in a Rural, African American Population

B3: Establish a Community Partnerships and Outreach Program to reduce health disparities: These activities will provide the foundation for integrated efforts to address chronic disease burden in populations that could provide talented recruits for military service, and disseminate evidence-based research findings. SE VIEW Projects linked to this goal:

- Lean Team Initiative
- Community Engaged Scholars Initiative (CES)
- The Health Empowerment Zone (HEZ)
- Healthy People in Healthy Communities
- Mobile Outreach Van Educational and Navigational Health Services for Underserved Populations Initiative (MOVENUP)

INPUTS

Churches/Faith-Based Organizations, Clinics/Health Centers, Emergency Dept., Federal Clinics, Funding Support, Government Agencies, Grocery Stores, Healthcare System, Hospitals Materials (Training Tools, Evaluation), MUSC, Health Clubs, PTO, Restaurants, Schools, SE View Consultants, SE View Projects, staff, tools and worksites

OUTPUTS

Activity

Community Engagement, Consultation, Cultural Exchange, Healthcare, Health Promotion, Health Career Academy, Instructional, Mentoring, Networking, Outreach, Policy, Prevention, Research, Screening, Service, Training, Web and Internet, Wellness Council

Target Population

Communities, I-95 Corridor, Coastal Carolina, Groups: African Americans, Community Leaders, Elderly, Obese Children, Rural Population, School Aged Children, Teenagers

OUTCOMES

Short Term

Increase knowledge base; increase skills

Medium Term

Utilization of knowledge base

Long Term

Increase positive behaviors; decrease in negative

DATA

Data Sources

Activity Logs, Attendance Logs, Behavioral Risk Factor Surveillance System, Census Data, Clinic Data, Community Members, Community Partners, Comorbidity (DRGs & ICD-9),

and awareness	behaviors	<p>Council of Governments, De-Identified Ref. Lists, Follow-Up Records, Federally Qualified Health Centers Patient Electronic Care Sys. (FQHC - PECS), Partners, Hospital Discharge Data, Institutional Data, Land Developers, Medicare/Medicaid Data, Meeting Agendas, Meeting Minutes, MUSC Faculty, MUSC Students, Neighborhood Assoc., Office Of Vital Records</p> <p>Participant Logs, Program Data, Program Faculty, Program Participants, Public Access Info, Registration Forms, SC Dept of Health, SC Off. Of Res. & Statistics, School Attendance Zones, School Data, Secondary Sources, Standardized Media Contact Form, Store Audit Survey, Structured Activity Form, Telephone Logs, Transportation Authority, Web “Hits”, Working Group Reports, Youth Risk Behavioral Surveillance System</p> <p>Data Collection Methods Case Studies, CDC Change Questions, Clinical Screenings, Current Resource List, Focus Groups, Interviews, Key Informant Interviews, Medical Assessments/Tests, Observation, Organizational Assessments, School Cafeteria Audits, Screening Tools, Service Delivery, Surveys –General, Tests/Assessments, Walkability Survey, Windshield Survey</p> <p>Data Collection Measures Clinical Dementia Rating Scale, Clock Drawing Test, Continuing Educ. Credits, Depression (PHQ-9), Diabetes Fatalism Scale, Diabetes Knowledge Questionnaire, Diagnostic Evaluations, Essential Medical Tests/Screens (Hemoglobin A1C; Blood Pressure; Cultures; Body Mass Index; Lipids Profile), Geriatric Depression Scale, Health Literacy, Logical Memory IIA, Medical Comorbidity (Charlson Index), Mini Mental State Exam, Modified Hachinski Ischemia Scale, Morisky Medication, Adherence Scale Patient Demographics Survey, Perceived Diabetes Self Efficacy Scale, Quality of Life Measures, Resource Use, Social Support, Standard Clinical Assessment, Summary of Diabetes, Self-Care Activities Scale, Supportive Care Measures</p>
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EVALUATION QUESTIONS

Process Evaluation Questions	Outcome Evaluation Questions	Impact Evaluation Questions
<p><u>Inputs</u></p> <p>How many resources (human and financial) are needed to achieve goals?</p> <p>Who will implement the program?</p> <p>Who provided program services?</p> <p>What are the characteristics of coalitions, collaborations, partnerships, etc.?</p> <p>Are the resources adequate?</p> <p><u>Activities</u></p> <p>How many programs/sessions/activities delivered?</p> <p>What services/activities were provided?</p> <p>Was the curriculum delivered as intended?</p> <p>Are implementation objectives being attained?</p>	<p><u>Increase Knowledge</u></p> <p>Did knowledge increase?</p> <p><u>Change Behavior</u></p> <p>Did we have behavioral changes?</p> <p><u>Achieve Outcomes</u></p> <p>Was programmatic integration achieved?</p> <p>Were strategic partnerships established?</p> <p>Are outcome objectives being achieved?</p> <p>Did the projects/interventions improve access to services?</p> <p>Did the projects/interventions improve the quality of services provided?</p>	<p>Which aspect of the program contributed more to the outcomes?</p> <p>Are there unintended outcomes?</p> <p>Are participants satisfied with program implementation and outcomes?</p> <p>What changes have participants made as a result of the program?</p> <p>Who does the program affect directly and indirectly?</p> <p>Who benefits from this program and how?</p> <p>Are the program’s results worth the resources?</p>

What was the quality of the delivery (consistency and fidelity)?		
<u>Target Population</u>		
How many participants are in the program?		
How many participants are in each session/activity?		
What is the participant's level of satisfaction with the program/activity?		
What were the facilitators to implementation?		

<u>INDICATORS</u> Levels of participation, levels of service and activity, levels of support, establishment of advisory groups, listing of community programs and services, evidence of partnership activities, achievement of objectives, changes in knowledge/behavior, changes in vending machine choices, changes in physical activity, improved nutrition, increase in DASH-type meals, research productivity, reduction in health indicators, increased access to healthcare services

Data Collection Tools: Evaluation Survey

GENERAL INFORMATION

1. Name and Contact Information Person Responding to Survey.

Name of Principal Investigator:	<input type="text"/>
SE VIEW Project:	<input type="text"/>
Name of Person Completing Survey:	<input type="text"/>
Title:	<input type="text"/>
Project Website:	<input type="text"/>
Email Address:	<input type="text"/>
Phone Number:	<input type="text"/>

2. Please indicate which Phase of the SE VIEW Project you received funding for.

- ☐ Phase I
- ☐ Phase II
- ☐ Phase I and II

3. What was the target geographical area served by your SE VIEW Project? Check all that apply.

- ☐ I-95 Corridor
- ☐ Charleston
- ☐ Coastal Carolina
- ☐ Johns Island
- ☐ Sea Island Gullah
- ☐ Williamsburg County
- ☐ Other (please specify)

4. What was the target population served by your SE VIEW Project? (Check all that apply.)

- ☐ African Americans
- ☐ Asian Americans
- ☐ Caucasians
- ☐ Hispanics
- ☐ Native Americans
- ☐ Adolescents
- ☐ Community Leaders
- ☐ Elderly
- ☐ Low Health Literacy
- ☐ Low Income
- ☐ Medically Underserved
- ☐ Obese children
- ☐ Parents
- ☐ Rural population
- ☐ School children
- ☐ Teachers
- ☐ Young adults
- ☐ Urban Population
- ☐ Other (please specify)

5. What were the health conditions targeted by your SE VIEW Project? (Check all that apply.)

- ☐ Alcohol and Drug abuse
- ☐ Alzheimer's
- ☐ Cancer
- ☐ Cardiovascular Disease
- ☐ Diabetes
- ☐ Exercise and Fitness
- ☐ High Blood Pressure
- ☐ Nutrition
- ☐ Obesity
- ☐ Oral Health
- ☐ Stroke
- ☐ Wellness
- ☐ Other (please specify)

☐ Screenings

☐ Self-Assessments

☐ Service Delivery (not health care)

☐ Teleconferences

☐ Training

☐ Treatment Services

☐ Web and Internet Activities

☐ Weight Loss Campaign

☐ Wellness Councils

☐ Wellness Workshops

☐ Other (please specify)

6. Please indicate all the activities that were included in your SE VIEW Project.

- ☐ Behavior Change Activities
- ☐ Case Management
- ☐ Community Based Participatory Research
- ☐ Communication Strategies
- ☐ Community Dialog
- ☐ Community Engagement
- ☐ Consultation
- ☐ Cultural Exchange
- ☐ Electronic Medical Records
- ☐ Exercise/Fitness Programs
- ☐ Focus Groups
- ☐ Gap Assessments
- ☐ Health Career Academy
- ☐ Health Education
- ☐ Health Evaluation
- ☐ Health Prevention
- ☐ Health Promotion
- ☐ Health Screenings
- ☐ Healthcare Service Delivery
- ☐ Instructional
- ☐ Medical Visits
- ☐ Mentoring
- ☐ National Conference
- ☐ Needs Assessments
- ☐ Networking
- ☐ Outreach
- ☐ Physical Assessments
- ☐ Policy
- ☐ Prevention
- ☐ Public Awareness Campaigns
- ☐ Radio Broadcast
- ☐ Referrals
- ☐ Research

☐

PROCESS EVALUATION

7. Did you achieve the expected level of participation in your SE VIEW Project?

☐ YES

☐ NO

If no, please explain:

8. Did you achieve the level of service and activity expected in your SE VIEW Project?

☐ YES

☐ NO

If no, please explain:

9. Did you achieve the level of support from _____ expected in your SE VIEW Project?

	YES	NO
MUSC Administration	<input type="radio"/>	<input type="radio"/>
MUSC IRB	<input type="radio"/>	<input type="radio"/>
TATRC IRB	<input type="radio"/>	<input type="radio"/>
SE VIEW Administrative Core	<input type="radio"/>	<input type="radio"/>
Target Community	<input type="radio"/>	<input type="radio"/>

If no, please explain:

10. How many participants did you have in your SE VIEW Project?

11. Was the curriculum or program delivered as intended?

☐ YES

☐ NO

If no, please explain:

12. What were the participants' level of satisfaction with the program/activity?

☐ Very Satisfied

☐ Somewhat Satisfied

☐ Unsatisfied

Comment:

13. What were the barriers or any problems you may have encountered with implementation of your SE VIEW Project?

14. What were the facilitators that helped you achieve your implementation objectives for your SE VIEW Project?

15. Were you able to establish coalitions, collaborations, and/or partnerships with the populations and communities served by your SE VIEW Project? If yes, please indicate by listing the persons or organizations they were established with.

OUTCOME EVALUATION

16. Were the Goals and Objectives of your SE VIEW Project achieved?

- ☐ YES
☐ NO

If no, please explain:

17. Were you able to document any changes in the knowledge base of the persons served by your SE VIEW Project?

- ☐ YES
☐ NO

If yes, please explain:

18. Were you able to document any behavioral changes in the population targeted by your SE VIEW Project?

- ☐ YES
☐ NO

If yes, please explain:

19. Did your SE VIEW Project's activities/interventions/services improve the access to services for your target population?

- ☐ YES
☐ NO

Please explain your answer:

20. Did your SE VIEW Project's activities/interventions/services improve the quality of services provided to your target population?

☐ YES

☐ NO

Please explain your answer:

21. What do participants do differently because of your SE VIEW Project?

IMPACT EVALUATION

While it is too early for SE VIEW to undergo a full impact evaluation, this section attempts to get at some of the areas that will need to be addressed.

22. Were there any unintended outcomes?

☐ YES

☐ NO

Please explain your answer:

23. Please indicate to what extent you think your SE VIEW Project has contributed to the following:

	No Impact			Significant Impact	N/A
Adaptation of health lifestyles	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Impact of clinical automation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Increased access to affordable health care	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Increased access to health care services	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Increased access to medication	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Reduction in health risk indicators	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

SCHOLARSHIP, RESEARCH PRODUCTIVITY, MEDIA

24. Please provide a list of any related scholarship and research productivity that occurred as a result of your SE VIEW Project.

25. Please provide a list of any media involvement as a result of your SE VIEW Project.

26. Do you think that your participation in SE VIEW improved your opportunities for future funding?

- ☐ YES
☐ NO
☐ MAYBE

27. Please provide a list of any funding opportunities that you have seen, applied for and/or won as a result of your SE VIEW Project.

Noticed opportunity

Applied for funding

Won funding

...and FINALLY

28. In reflecting back on SE VIEW, the overall goal was to discover and deliver innovative health care and community capacity-building solutions, to what extent do you think SE VIEW has achieved these.

	Somewhat			Definitely
Discovered innovative health care	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Delivered innovative health care	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Implemented community capacity building solutions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (please indicate below)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (please indicate below)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Other (please specify)

29. A key purpose behind the funding of this project was to improve the outcome for military recruits in South Carolina. To what extent do you think your SE VIEW Project contributed to this outcome. Please explain.

30. Please provide any additional comments that you have about the overall SE VIEW Project, including any recommendations that you may have.